Brahui and the Zagrosian Hypothesis

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This paper is an extension of McAlpin (2003) and follows the same conventions I used there, particularly for the citations of Kurux.[1] My earlier monograph (McAlpin 1981) is, at this point, largely out-of-date, not so much wrong as bypassed by more complete sources and better argumentation. However, the portion on the velars, PED *k, is completely mistaken and is superseded by this article. The underlying assumption that we understood Proto-Dravidian phonology proved premature. The separation of the old velars into palatals, velars, and uvulars has had a major impact on the comparative statements. This paper is restricted to the dorsal consonants (palatals, velars, uvulars) and their immediate extensions. This is primarily because this information is new, but it also keeps the body of data small enough that a complete set of the data can be presented in a reasonably sized paper.

1 INTRODUCTION

1.1 Brahui

1.1.1 Brahui is primarily spoken in Balochistan Province of Pakistan, in a belt running through the Brahui Hills from near Quetta through Kalat and up to Las Bela, and in adjacent areas of Afghanistan and in pockets in eastern Iran, as far as the Marv oasis in Turkmenistan. Today, it is also spoken in Quetta, Karachi, and most of the cities of Sind Province (Elfenbein 1997b: 797; 1998: 388–89). Brahui is nowhere dominant and is always embedded in another language, usually Balochi, but any language of the area is possible. Multilingualism is the norm. See Elfenbein (1990) for ethnography and history with an annotated bibliography. The Brahuis are traditionally transhumant pastoralists who move with their flocks from the hills in summer to the plains of Sind (or elsewhere) in winter, and back again. They are also agriculturalists, and often combine or exchange the two lifestyles. The land they inhabit is semiarid and typical of the Iranian plateau. Brahuis traditionally straddle a cultural divide, spending the summer on the Iranian plateau and the winter in South Asia.

1.1.2 The Brahuis are members of a tribal confederation, usually the Brahui Confederation, but other Balochi confederations occur as well. Since the term Brahui can refer to a speaker of the language or a member of the Brahui Confederation, and the two are by no means coterminous, there is great confusion in the population counts. Reasonable estimates are from 4,000,000 in Pakistan, 200,000 in Afghanistan, and 20,000 in Iran (Lewis and Simmons 2013) to a tenth of that (Elfenbein 1998: 388–89). Similar problems of terminology are found in dialect numbers and boundaries.

1.1.3 Dialect variation is not major in Brahui and is limited to a few phonological and grammatical markers. Terminology is fluid, and on the face of it, details can appear

1. I wish to thank Franklin Southworth and Suresh Kolichala for their insightful comments on an earlier draft of this paper. The errors remain my own.

contradictory; note pronunciation of /h/ in Bashir (1991: 4) and Elfenbein (1997b: 798). This work will follow Bashir (1991: 4; 2003: 3), which has more details. Traditionally, only two documented subdialects are based solely on location: Kalati (a subdialect of Sarawan) and Nushki (a subdialect of Chagi). Kalat was the capital of the former Khanate, and Kalati is the standard dialect. Brahui's major dialects are based on traditionally migrating groups, consisting of Sarawan, north and east of Kalat (using the Bolan Pass to the Kacchi plain), and Jhalawan, south of Kalat (using the Mula Pass to lower Sind). To this, Bashir (1991: 4) adds Chagi in the west of Balochistan and in Iran.

1.1.4 While there are a small number of written works including poetry, Brahui is not commonly written. Elfenbein (1998: 391) confirmed Bray's estimate that there were fewer than 6,500 literates in Brahui and probably never have been more, but more recent educational efforts may have increased this. Brahui lacks a standard script, and none of the variants of the Perso-Arabic script is satisfactory. The standard grammar (Bray 1909), excellent for its period, uses a Latin script, as does an updated grammar (Andronov 2006). While minimally written, Brahui is sophisticated, with extensive borrowings from Persian and more recently from Urdu in Pakistan. It was a minor language of the court of the Khan of Kalat.

1.1.5 Notwithstanding the previous paragraph, Brahui has a literary (and poetic) style with differences from everyday usage. Andronov (2001) has considerable discussion and examples of poetic usage. Urbanization is causing another split in style between urban and rural dialects. The urban dialects have more complex verb forms, particularly for complex aspects, and innovate rapidly; see Bashir (2010). Rural dialects are more conservative.

1.2 Elamite

1.2.1 Elamite was spoken in what is now southern Iran, in the Zagros Mountains and adjacent plains. Elam was essentially contemporaneous with neighboring Sumer in the development of civilization and writing, usually following by a generation or two, but sometimes leading. Writing began in Elam around 2,900 B.C. out of the same use of tokens and bullae that were used in Sumer. The oldest script, Proto-Elamite, is quite distinct and separate from Sumerian. It has never been deciphered, and it is only by association that we believe it to be Elamite. This may be mistaken. Another innovation out of this tradition, called Linear Elamite, came into use around 2,500 B.C. and was used for several centuries. It has a single bilingual and a very tentative reading in Elamite. Around 2,300 B.C. the Sumero-Akkadian cuneiform script was borrowed intact from southern Mesopotamia. It is a lexico-syllabic system with complex rules for interpretation. Fortunately, Elamite largely ignored or discarded most of this and is mostly a syllabary based on (C)V(C) syllables. This formed the basis for all further writing in Elamite and is well understood.

1.2.2 Cuneiform Elamite can be divided into four periods or dialects. The first, Old Elamite (OE), was used in a few documents from Susa from the third millennium and early part of the second millennium B.C. After a long gap in the attested record with documents in Akkadian, the reemerging Elamite kingdom used Middle Elamite (ME) during the second half of the second millennium B.C. This was centered on Susa in the plains next to Mesopotamia. It is attested primarily on inscribed bricks, which are numerous, but very repetitive. In the first part of the next millennium B.C. another variety, called New Elamite (NE), was in use around Susa in the plains. A major dialect change is found in Achaemenid Elamite (AE), where Elamite functioned as the major administrative language of the Achaemenid Persian Empire, whose ceremonial capital was at Persepolis in the mountains. We now know that the site of Anshan, the second great center of Elam (besides Susa) is at Malyan, not far from

Persepolis. There are two usages in AE, the royal inscriptions and bureaucratic records. The first are public documents, often bi- and trilingual, and include the great trilingual inscription of Darius I at Bisitun (DB). The administrative records range from periodic summaries (like journal entries), through the common detailed record tablets (pay and warehouse receipts and disbursements), to temporary finger texts (like sticky notes). The last Elamite inscription comes from the last years of the Achaemenid Empire.

1.2.3 The best, and readily available, overview of the Elamite language is Stolper (2004), which summarizes and cites all of the sources. The most detailed grammar with extensive examples is Khachikian (1998). Other reliable sources are Diakonoff (1967) and Grillot-Susini (1987). Grillot-Susini (1998) also gives an excellent short summary of the grammar. There is no standard grammar. The standard source for archeology and history is Potts (1999).

2 ZAGROSIAN HYPOTHESIS

2.1.1 The underlying working concept for this paper is that the Proto-Elamo-Dravidian group, which I have renamed Proto-Zagrosian, split into Elamitic and Dravidian subgroups, and that Brahui belongs to the Elamitic subgroup. Starting with the tree diagram in McAlpin (2003: 543), I have relabeled PDr_2 as Proto-Peninsular-Dravidian (PPD), PDr_1 as Proto-Dravidian (PDr), and PDr_0 as Proto-Zagrosian (PZ), following an earlier suggestion in McAlpin (1975: 109). Proto-Zagrosian then adds Proto-Elamitic (PEl), which splits into Elamite and Brahui branches; see Figure 1. In other words, Proto-Elamitic has been added to PDr_0 and Brahui has been attached to it, completing the migration of Brahui from North-Dravidian. My hypothesis is that Brahui is Elamitic and not properly Dravidian, but still cognate. This is the primary point of this paper.

3 PHONOLOGICAL ENVIRONMENT

3.1 Vowels

3.1.1 All of the languages involved use variations on the same vowel structure, which is seen in detail in PPD. There are three primary vowels in all positions, /i, a, u/, with two more, /e, o/, that have a more restricted basis and may be lost in Elamitic. The root structure is basically initial (C)V(C) with stems optionally adding +V((C)C). Stems regularly show contrasting vowel length while roots do not; i.e., roots can have derived stems with both long and short vowels. There are patterned vowel losses in Elamitic while Dravidian stem vowels tend to be very stable. Stress tends to be on the stem, first or second vowel, but in Brahui it may be lexically marked on any vowel. This pattern of stem stress matches what little can be inferred on stress from Elamite; see Khachikian (1998: 10).

3.2 Consonants

3.2.1 Consonant clusters are restricted, with no initial clusters in Proto-Dravidian. Brahui has developed initial clusters due to vowel loss, i.e., #CVC > #CC, and borrowing. The cuneiform script makes initial clusters difficult to determine for Elamite; i.e., Elamite shows no initial clusters, but that could be due to either script or phonology. The noninitial clusters are normally homorganic due to assimilation. There are regularly four primary points of articulation: labial stops, coronal stops, alveopalatal affricates, and dorsal stops. Coronals and dorsals both tend to have a three-way split, usually involving coarticulated tongue-root features: coronals into dentals, alveolars, and postalveolars (retroflex for Dravidian), while

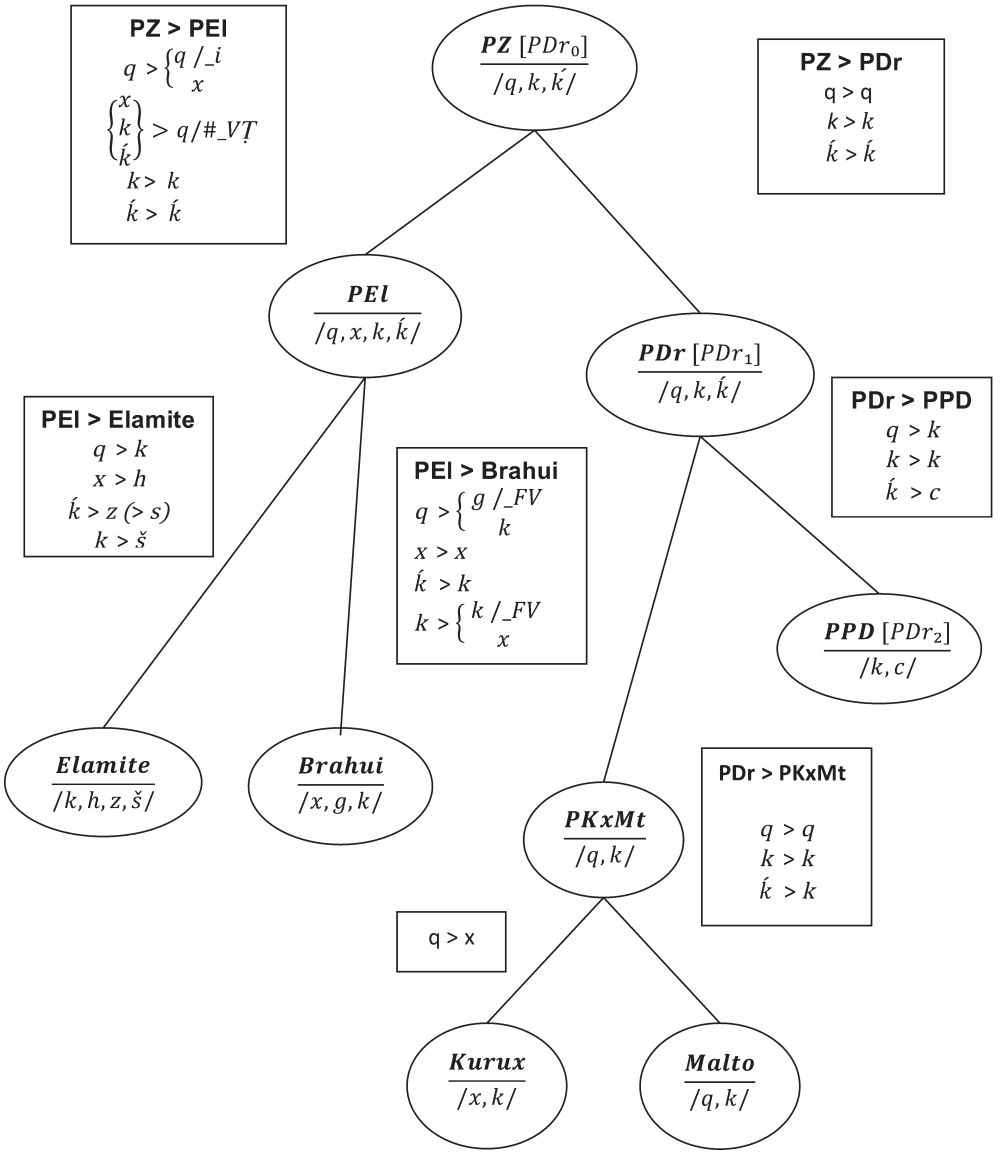

Figure 1. Initial PZ Dorsal Consonants and Their Reflexes

dorsals have palatal, velar, and uvular stops. There are regular and common simplifications and mergers from this underlying arrangement. The result is patterns with five to seven contrasting points of articulation. There are bilabial and coronal nasals, with homorganic variants with all the obstruants. There tend to be multiple liquids. Semivowels are restricted to /w/ and /y/, and pattern as consonants. Dravidian languages tend to have no diphthongs or vowel clusters; Brahui has them; Elamite does not. Brahui and Elamite have /h/. Details of the phonemes for each language are given in Appendix 1.

3.3 Special Phonological Patterns

3.3.1 The coronal and dorsal obstruents commonly have strong coarticulations with the tongue-root features normally associated with vowels. For example, (post)alveolars are [+ back], dentals are [- back], while true retroflexes are [+ back, + low] among other features. For the dorsals, palatals are [+ high, - back] (*i*-colored), velars are [+ high, + back] (*u*-colored), and uvulars are [+ low, + back] (*a*-colored). As may be expected, this leads to strong interactions with the adjacent vowels.

3.3.2 Palatals can be modeled as point palatal articulations, as velars followed by a /y/, or as the velar allophone before an /i/ including diphthongs. In other words, /ḱa/ , /kya/, and /kia/ are largely equivalent notations at this level of reconstruction. This fronting is expected for palatals and alveopalatals where i̱-coloring is inherent.

3.3.3 Backed coronals, i.e., (post)alveolars and retroflexes, will back the vowel before them. This, in turn, will back the preceding consonant, altering the environment for some sound changes. These backed coronals are symbolized with a Ṭ in the phonological rules.

3.3.4 The phonology reconstructed in McAlpin (2003: 543) for PDr has three dorsal stop phonemes, a uvular /q/, a velar /k/, and a palatal /ḱ/. It is not certain if the latter is a true palatal stop or a palatalized velar, but the contrast with plain velars is clear since it goes in two directions, becoming a /*k/ in PKxMt and a /*c/ in PPD. Proto-Elamitic also has the same three dorsal stops, and a dorsal fricative /*x/.

3.4 Brahui Phonology

3.4.1 Brahui phonology is not inherently complex, but it is immersed in an intricate situation. The current primary sources are Elfenbein (1997b), Bashir (1991: 5–21), and Andronov (2006: 10–15). Brahui is always embedded in another language, historically various dialects of Balochi, but increasingly also in Urdu (Persian in Iran?). This embedding is so pervasive that Elfenbein (1997b: 798–99) cross-references the vowel allophones of Brahui dialects to the allophones of the embedding Balochi ones (Elfenbein 1997a: 765–66). Brahui has five long vowels /ā, ī, ū, ē, ō/ and three short ones /a, i, u/. There are short versions of /e/ and /o/, which are usually considered allophones of the long vowels. However, there are limited minimal pairs for both, and the matter is still open; see Bashir (1991: 15). Confusingly, Bray (1909, 1934) writes <e> and <ē>, but only one <o>, sometimes marked long <ō> (Bray 1909) and sometimes not (Bray 1934). Andronov (2006: 10–11) gives the arguments for keeping them separate. Historically, the attested mid vowels were probably long. Nasalized vowels occur in loanwords. Brahui has limited retrogressive vowel harmony, particularly noticeable in verb forms: /kungusuṯ/ for /kungasuṯ/ 'I had eaten' (Bashir 1991: 15; Bray 1909: 31). Brahui consonants are mostly typical for the area except as noted. The glottal phoneme /h/ has varying allophones of [h] and [ʔ, ∅], mostly following the embedding Balochi dialect. Standard Kalati Brahui has [h]. Brahui has a strident lateral fricative /ɬ/ found in none of its contact languages. Brahui also has a distinctive series of (post)alveolar stops. These are heard and written as retroflexes in Urdu, but are clearly distinct from South Asian retroflexes (Bray 1909: 26–27). This paper uses subposed dots for postalveolars /ṭ/ and hooks for retroflexes /ʈ/ in proto languages.[2] Modern languages follow the cited source. A few South Asian retroflexes have been borrowed from Sindhi and are true retroflexes. There is also a retroflex flap /ɾ/ that seems to be a true retroflex.

2. Both Cuneiform and Dravidian studies use characters with subposed dots, but with different meanings. To help avoid confusion, this paper will only used subposed dots for retracted consonants, the usage in the IPA, or in direct citations.

3.4.2 Brahui has been written by a relatively small number of people for at least two centuries, but there is no standard script. There are two (or more?) versions in a Perso-Arabic script, one using four dots above for postalveolars, and one based on Urdu, using superscript ط for postalveolars. Both are unsatisfactory since they do not regularly indicate short vowels, which are important in Brahui. Brahui is usually cited using Bray's romanization or a variant. The Brahui have recently established a new internet-compatible romanization, which this article follows for postalveolars / ŧ, đ, ŕ /, otherwise following Dravidian norms and the International Phonetic Alphabet (IPA). Brahui alphabetic order (Elfenbein 1983: 191) proceeds after Bray (1934): a, ā, b, c, d, đ, e, ē, f, g, ɣ, h, i, ī, j, k, l, ɬ, m, n, o, ō, p, r, ŕ, s, š, t, ŧ, u, ū, v, x, y, z, ž. The Brahui Language Board's alphabet (Bráhúí ná Báṣáǧal) and order is b, á, p, í, s, y, ṣ[š], v, x, e, z, z[ž], ǧ[ɣ], f, ú, m, n, l, g, c, t, ŧ, r, ŕ, d, o, đ, h, j, k, a, i, u, ń[~], ḷ[ɬ]. See Appendix 1A.

3.5 Elamite Phonology

3.5.1 In spite of the complexities introduced by Elamite's cuneiform script, it is possible to reconstruct a working list of phonemes, if not to clearly enumerate them due to ambiguities in the status of phonemes and allophones.[3] The current sources on phonology are Stolper (2004: 69–73), with a clearer overview, and Khachikian (1998: 5–10), with more details. There are four vowels in the inherited cuneiform script, three full /i, a, u/ with a partial fourth /e/. Vowel length, if any, was not written. Final <i> is often graphic, i.e., indicates a final consonant, while final /i/ is often written with <e>. There is much interchange of <i> and <u> with many doublets: ME turuš, AE tiriš 'he said'; ME kutu, AE kiti 'cattle'; ME rutu, NE riti 'wife'. ME prefers <u>; AE prefers <i>, but it can go either way, ME ani, AE anu 'not'. Following Stolper (2004: 70–72), stops are /p, k, t/ and /b, d, g/ where the "voiced" variants are mostly marking some other limited contrast, but not primarily voicing. In general, intervocalic single stops are voiced; geminate stops are voiceless. Spirants include sibilants /s/ and /š/ along with affricates /z/ [ʦ?] and possibly /c/ [ʨ]. There is much confusion and interchange in these spirants, both in the phonology and in the cuneiform script; see Khachikian (1998: 7–8). A glottal /h/ is important in older Elamite, but lost in AE. There are two glides, /r/ and /l/, with <rr> distinct from <r> and probably <ll> from <l>. The semivowels /w/ and /y/ are marginal. Early in Elamite, /w/ merged with /m/, whose pronunciation is uncertain since it combines both /w/ and /m/ in borrowings from Old Persian.[4] See Appendix 1B for chart.

3.5.2 Like Brahui, Elamite has thematic vowels, where a vowel (normally /a/) can be added to the root to form a verb stem. In Brahui, thematic vowels are sometimes required, sometimes not, but often optional, creating a great deal of "noise" in the verb paradigm as they come and go; see DeArmond (1975: 246–48) for details. Elamite has a regular pattern of aphesis where the initial vowel of #VC roots is lost and where the thematic vowel is mandatory for verbs. Thus, PZ *#VC regularly becomes #Ca in an Elamite verb when C is a coronal. Since this change reduces the cognate portion for word stems to a single consonant, the result does not provide very good evidence for that cognation.

3.5.2.1 PZ *en- 'to speak, say', El. na- 'to speak, say', PDr *en- 'to speak, say' [DEDR 868].

3.5.2.2 PZ *iṭ- 'to put', El. ta- 'to put', PDr *iṭ- 'to put, place' [DEDR 442].

3.5.2.3 PZ *ar- 'entanglement'. El. rabb- 'to tie, bind; make captive' (with added -p-[causative?]). Br. ar- 'to entangle'.

3. Cuneiform citations are given in syllables separated by hyphens, with the traditional font styles according to interpretation. If the signs are not part of the phonological interpretation, such as determinatives, they are superscripted.

4. Given the ambiguity, the symbol ʍ has been used in the Diagram 3 as a cover symbol for some sort of bilabial.

3.5.2.4 PZ *areh ‘man’, El. ruh ‘man, human’, Br. are ‘man’ [DEDR 917 (?)]; see §10.3.1.5.

4 WORD PREPARATION

4.1.1 There are problems with working with both Elamite and Brahui sources. Both have massive numbers of loans, and both are effectively closed systems whose interpretation is limited by all the constraints of historical linguistics. Before doing any analysis, it was important to prepare the lexical lists on the basis of their reliability for comparative analysis.

4.2 Elamite

4.2.1 Elamite was written in a maladapted cuneiform script designed for other languages, first Sumerian, then Akkadian. The sources are either numerous but very repetitive (ME inscribed bricks, most AE inscriptions), or rare with limited contexts. The language was in use over the course of two millennia in different regions and several dialects. There are no sources from libraries or schools, i.e., no educational texts or word lists. There is only one long inscription that is well understood, the Bisitun inscription of Darius I, which has problems of its own. It is important to understand how reliable a given reading really is.

4.2.2 I sorted Elamite words into five lists on the basis of the surety of the cited form. List A consists of words that have at least one parallel text; i.e., they have a bilingual or equivalent. This is the reliable core of usable words, but even for them there may not be a certain reading. List B consists of words that have a firm reading often from multiple periods, but with no parallel text. These are good and sometimes better than list A. List C consists of words that have a usable context and a reasonable reading, but no bilingual counterpart. List D consists of words with only a general context, such as a foodstuff or a wooden object, but no exact meaning. Words in List E have ambiguous contexts resulting in guesses with multiple proposed readings. A significant number of Elamite terms have a single citation and are hapax legomena. There could also be a List F for words for which there were no readings at all, which was obviously not included. The surety of the citation is only a general guide to the certainty of the reading.

4.2.3 My working identity codes for Elamite roots were used in this article. It may be published in the future, and this would provide a cross reference. The coding consists of a letter followed by three digits, such as A037. Two words with the same identifier are examples of the same root. Moreover, the initial letter gives the surety class of the root (A through E). Examples are generally ordered by their certainty of their reading, commonly, but not always, from surety class A to E. The most reliable Elamite evidence is presented first.

4.2.4 The first true compendium of Elamite, *Elamisches Wörterbuch* [EW] (Hinz and Koch 1987) makes complete searches of that source possible for the first time. In the orientalist tradition, it gives every opinion on every spelling variant of every word including all names. It does not have headwords, and the syllable-based ordering is confusing at first. For citations in this paper, the most common variant is used, favoring the third-person singular of the base verb, if available. Page numbers are included in citations to help locate the sources. The EW definitions are good, but not authoritative. It gives the opinions of its two authors; these are just two more opinions in the mix. However, all opinions are presented.

4.3 Brahui

4.3.1 While Bray’s (1934) vocabulary is excellent and only a comparatively small list of words have been added to it (Elfenbein 1983), Brahui’s lexicon is an etymological nightmare. The number of loans is massive, from Iranian, South Asian, and other sources, and

the loans are often well assimilated. No one scholar has the breadth of knowledge needed to assess all the potential sources. This would include Persian, Balochi, Pashto, comparative Iranian, Sindhi, Siraiki/Lahnda, comparative Indo-Aryan, and comparative Dravidian as well as Elamite. Fortunately, several items on the list have up-to-date sources. First among these is the *Dravidian Etymological Dictionary* [DED] (Burrow and Emeneau 1960) and its major revision [DEDR] (Burrow and Emeneau 1984) along with *A Comparative Dictionary of the Indo-Aryan Languages* [CDIAL] (Turner 1962–85). These are mostly authoritative in their areas. For the author speaking as a Dravidianist, however, the major new source is *Iranian Lexical Elements in Brahui* [ILEB] (Rossi 1979). This covers not only the missing Iranian sources, but also provides a sound framework for moving forward. Rossi provides detailed lists with discussion by etymological category and degree of certainty; for example, borrowings from Balochi are divided into two lists: (A) those with good Iranian etymologies and (B) those with uncertain Balochi etymologies. Furthermore, he provides a third list (E) for words shared by Balochi (or other Iranian languages) and Brahui for which no clear direction of borrowing could be established. For the first time an outsider can have some appreciation of, and control over, the Iranian data. This approach seemed so useful to me that I expanded it to the rest of Brahui vocabulary.

4.3.2 What proceeded next was an elaborate exercise in etymological classification. Wherever a word could be assigned to a sure or probable source, this was done, and it was then removed from the working list, except for Dravidian cognates. The goal was get to a lexical remnant that would contain the words most likely to have been inherited, i.e., not borrowed. While a certain amount of dross would be included by such an approach and would include numerous terms for 'a fodder grass' or the equivalent, the resulting core was likely to contain the great bulk of any potential cognate etyma. When this was completed, a working vocabulary consisting of the Core and Border (i.e., possibly but not certainly inherited etyma) groups was prepared. This had just over thirteen hundred items, 837 Core and 485 Border. The list itself made major phonological statements. Several possibly contentious issues simply disappeared with their attestations. The working core vocabulary had no initial postalveolars and no initial f-. The relevant parts of this list with initial dorsal consonants are given in Appendix 3.

5 RECONSTRUCTION AND REFLEXES

5.1.1 Proto-Zagrosian has a clear velar/uvular contrast, as the following discussion will make clear. It also has a palatal stop (or palatalized velar) that is phonemic; see §3.3.1–2. Thus, the reconstructed dorsal phonemes for PZ are /*q, *k, *ḱ/, the same as Proto-Dravidian. See Figure 1 and Diagram 1.

5.2 Proto-Zagrosian Changes

5.2.1 **PZ > PEl.** Uvular PZ /*q/ regularly becomes PEl /*x/ except before /*i/ where it remains PEl /*q/.[5] Then this /*x/, PZ /*ḱ/ and /*k/ become PEl /*q/ when a backed coronal

5. There is an inherent tension between the frontness of [i] and the backness of [q] which invites changes. Elamite fronted the /q/ when before /i/, as an allophonic variant only, not a new phoneme. Later, the backed variants became fricatives, leaving the fronted variant still a stop, still /q/, but pronounced [k](?). While probably velar, this allophone was distinct from /k/, which was more fronted. In a parallel manner, North Dravidian solved the same tension by backing the vowel, *qi > qe; see McAlpin 2003: 528.

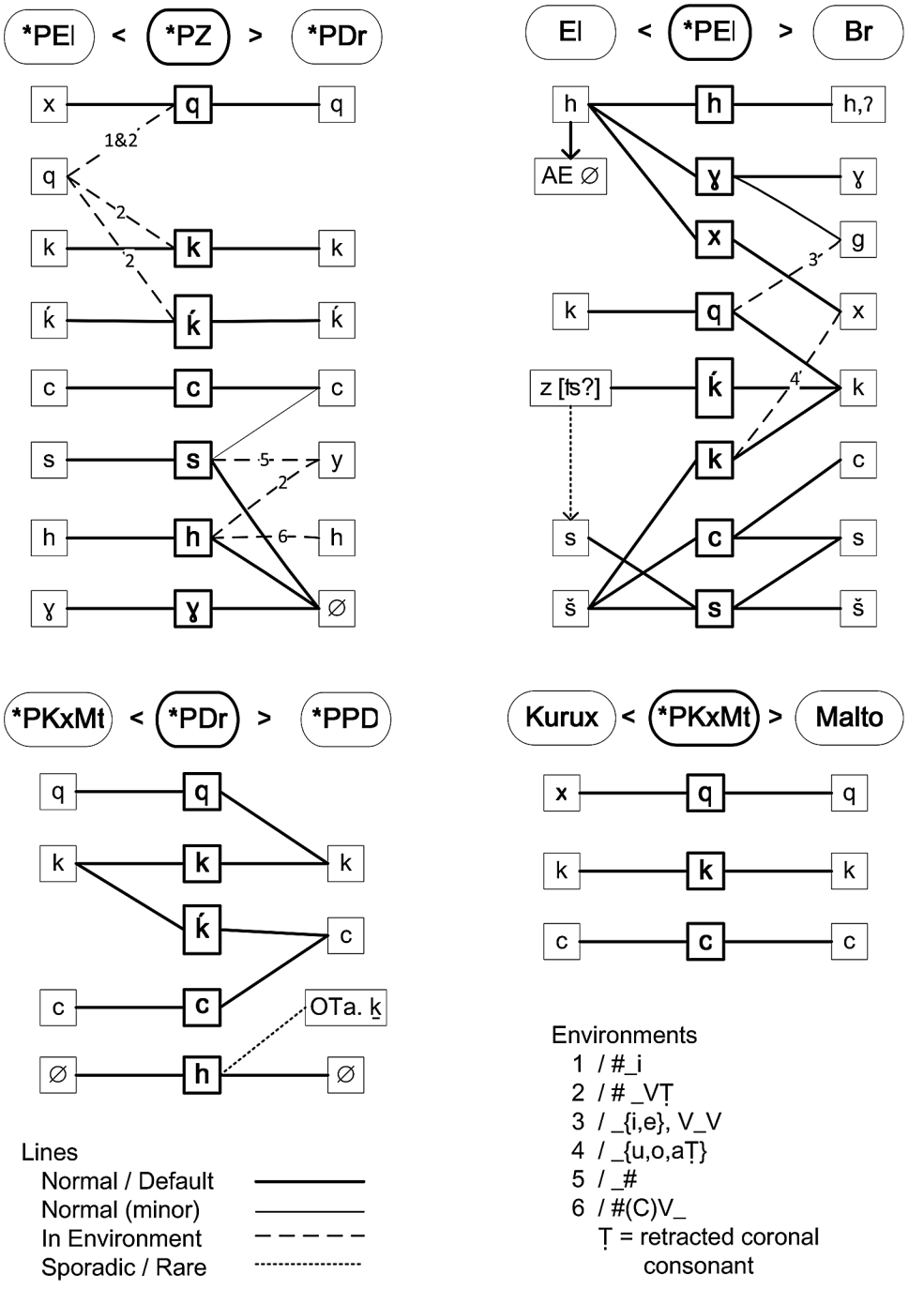

Diagram 1 - Major Correspondences for Dorsal Consonants and Related

consonant (Ṭ) follows in the next syllable. Except for this special case, velar PZ /*k/ regularly remains PEl /*k/, and palatal PZ /*ḱ/ regularly remains PEl /*ḱ/. Thus, following two separate paths, PZ /*q/ remains PEl /*q/ only before /*i/ and /*VṬ/; otherwise it becomes /*x/.

5.2.2 **PZ > PDr.** There are no changes in dorsals from Proto-Zagrosian to Proto-Dravidian. Uvular PZ /*q/ remains PDr /*q/. Velar PZ /*k/ remains PDr /*k/. Palatal PZ /*ḱ/ remains PDr /*ḱ/.

5.3 Proto-Dravidian Changes

5.3.1 Proto-Dravidian has a straightforward set of dorsal stops: uvular /*q/, velar /*k/, and palatal /*ḱ/. For PPD, PDr /*q/ becomes /*k/, PDr /*k/ remains /*k/, and PDr /*ḱ/ becomes /*c/. For Proto-Kurux-Malto (PKxMt), PDr /*q/ remains /*q/, PDr /*k/ remains /*k/, and PDr /*ḱ/ becomes /*k/; see McAlpin 2003: 543. Kurux much later changes PKxMt /*q/ to /x/, while it remains /q/ in Malto. Kurux and Malto are closely related; see §12.2.

5.4 Proto-Elamitic Changes

5.4.1 Due to the split of its uvulars, Proto-Elamitic has a more complex set of dorsals, PEl /*q, *x, *k , *ḱ/. For Elamite, PEl /*k/ becomes /š/, and later PEl /*q/ becomes /k/, PEl /*x/ becomes /h/, and PEl /*ḱ/ becomes /z/ [ts?], which may go to /s/. This /*k/ > /š/ shift is defining for the Elamite branch. For Brahui, PEl /*q/ becomes /k/ except before a front vowel where it becomes /g/; PEl /*x/ remains /x/; PEl /*ḱ/ becomes /k/ in all environments; and PEl /*k/ becomes /x/ except before a front vowel (including nonbacked /a/) where it remains /k/. See Figure 1 and Diagram 1.

5.5 Other Phonemes

5.5.1 All other phonemes are given in Appendix 1, and reflexes are summarized in Appendix 2. These are included to help in the interpretation of the data and are not necessarily exhaustive. Except for the dorsals and /*š/, these are relatively minor changes from McAlpin 1981.

6 DORSAL CORRESPONDENCES

6.1.1 The data presented here are the cognates with PZ dorsal stops /*q, *k, *ḱ/ and all their reflexes. To this core, PZ /*s, *h, *ɣ/ have been added since they share reflexes with the dorsal stops. This is new information, totally replacing what has been previously presented for these consonants. This is also the complete current list of items with dorsal and related consonants. The supporting list of all available possibilities for Brahui with initial dorsals can be found in Appendix 3.

6.1.2 The rules for the dorsal stops have already been given above and in Figure 1. The complete sets of reflexes and correspondences are in Appendix 2. Since the stops have detailed interactions with adjacent vowels, a table of the dorsal stops and reflexes has been prepared with the vowels, primarily initial CVC, but with other environments as available. This is then tied line-by-line to the evidence. See Table A.

7 UVULAR CORRESPONDENCES

7.1.1 The following sets of cognates follow the order presented in Table A. The order within entries is Elamite, Brahui, Kurux, Malto, and, where relevant, other Dravidian (PPD)

citations. Since this paper focuses on Brahui, the related items from Appendix 3 are included when they have no cognate in Elamite or North Dravidian, if they can reliably be assigned to a list on the basis of their own phonology or of cognates in PPD. The order within sets is from the most reliable Elamite terms to the least reliable (generally classes A to E) followed by terms with no Elamite.

*7.1.2 PZ *qi-.*

The tension between the backed consonant and the front vowel leads to some unique changes for PZ /*qi/. In PEl, /*q/ remains /*q/ before /*i/ while changing to /*x/ elsewhere. In Elamite, this /*q/ becomes /k/ while in Brahui. /*q/ becomes /g/ before front vowels and /k/ otherwise. In PDr, /*q/ remains /*q/. This changes to /*k/ in PPD, while remaining /*q/ in PKxMt; see McAlpin 2003: 533–38. Kurux later shifts /*q/ to /x/, while Malto keeps /q/. PKxMt lowers high vowels to mid after uvulars (*i > e, *u > o). Separately, Kurux later raises mid vowels to high in past tense verb morphology, partially reversing this change.

7.1.2.1 El. [A083] ki, kir ‘one’ (EW, 459: ki ‘ein, eins’; EW, 468: ki-ir ‘einer’). Br. giŕ, gih ‘all, the whole; whole; only, exclusively’ (App. 3, D13) [no DEDR]. PEl *qi. The -r in Elamite is the delocutive (third-person) animate singular marker. No cardinal number in Elamite is directly related to Dravidian or Brahui. However, several numeric words are cognate. AE un-ra ‘each’ is morphologically parallel to PDr *o̲n̲ru (< *o̲n̲+*tu) ‘one, one thing’.

7.1.2.2 El. [A087] kiti ‘to have, possess; pour out, expend’ (EW, 489: ki-ti-in-ti ‘du sollst [nicht] haben, behalten!’). Br. —. Kx. xēnda (past xindyas) ‘to buy, purchase’. Mt. qēnde ‘to take along with, have with, possess’ [DEDR 2001]. PZ *qint- ‘to obtain through a process’. While found in the DB with full Old Persian and Babylonian parallels, normally the gold standard of sources, the meaning of El. kiti is ambiguous. The context is “should not ___ offspring”; the parallels are “should not have descendants.”

Elamite commonly dropped nasals before consonants and presumably nasalized the preceding vowel. This led to a somewhat erratic indication of the nasal. Sometimes, the nasal was written to indicate the nasalization and sometimes not; AE $^{hh\cdot}$hi-in-du-iš, $^{h\cdot}$hi-du-iš, ‘Indian’.

*7.2 PZ *qa-.*

7.2.1 The regular correspondences for initial uvulars before vowels other than -i- in PZ are PEl /*x/ and PDr /*q/, which undergo the regular changes for each group.

7.2.1.1 El. [A051] hal ‘land, ground > city’ (EW, 574: ha-al ‘Land; Stadt; Boden’). Br. —. Kx. xall ‘field, piece of land suitable for tillage’. Mt. qalu ‘field on the hills’. PPD *kaɭam ‘flat open space, threshing floor, battlefield’ [DEDR 1376]. PZ *qaḷ.

7.2.1.2 El. [C064] halma- ‘to disappear’ (EW, 603: hal-ma-ak-na ‘er soll verschwinden!’). Br. xall- ‘to steal [cattle]’ (App. 3, C27). PEl *xal. PPD *kaɻ ‘to rob, steal’ [DEDR 1372]. PZ *qaḷ.

7.2.1.3 El. [D181] hasu ‘to anoint’ (EW, 640: ha-su-ra ‘Salber (?)’). Br. xass- ‘to shake, fling; deliver a blow; hustle, pester, worry’ (App. 3, D70). [no DEDR]. PEl *xas.

7.2.1.4 El. —. Br. xwāh- ‘to graze’ (App. 3, C56). Kx. xāpa ‘to protect, guard, tend’. Mt. qāpe ‘to wait for, watch’. PPD *kā ‘to watch, guard, preserve’ [DEDR 1416]. PZ *qa.

7.2.1.5 El. —. Br. xarēn ‘bitter, weak’ (App. 3, C34). Kx. xaṛxa ‘bitter, pungent, harsh’. Mt. qaṛqe ‘bitter’. PPD *kaʈa ‘to throb, pain; be bitter, pungent’ [DEDR 1135]. PZ *qaṭ.

7.2.1.6 El. —. Br. xan ‘eye’; (App. 3, C30). Kx. xann ‘eye’. Mt. qanu ‘eye’. PPD *kaɳ ‘eye, orifice’ [DEDR 1159a]. Also, Br. xan ‘knot in wood’ (App. 3, C30.1) [DEDR 1160], xaṙīnk ‘tears’ (App. 3, C39) [DEDR 1159b]. Kx. xann ‘place on bamboo or cane where side shoot was cut away’. PPD *kaɳ ‘joint in bamboo or cane’ [DEDR 1160]. PZ *qaṇ.

§	PZ	PEl	Elamite	Brahui	PDr	PKxMt	Kurux	Malto	PPD
7.1.2	*qi-	*qi	ki	gi	*qi	*qe	xe	qe	*ki
7.2	qa-	xa	ha	xa	qa	qa	xa	qa	ka
7.3	qu-	xu	hu	xu,(xa)	qu	qo	xo	qo	ku
7.5	qe-	xe	ha, hi	xa	qe	qe	xe	qe	ke
7.6	qo-	xo	ha	xa,xo	qo	qo	xo	qo	ko
7.7	-q-	x	h	x	q	ɢ	x	ɢ	k
7.7.1.2	-qq-	q	k		qq	q	x	q	kk
8.1	ḱa-	ḱa	sa, za	ka	ḱa	ka	ka	ka	cā, ce
8.2	ḱu-	ḱu	su, zu	ku	ḱu	ku	ku	ku	cu
8.4	ḱuṬ-	qu	ku	ku	ḱu	ku	ku	ku	cu
9.1	ka-	ka	ša	ka	ka	ka	ka	ka	ka
9.3	kaṬ-	ka	ša	xa	ka	ka	ka	ka	ka
9.4	ki-	ki	ši	ki	ki	ki	ki	ki	ki
9.5	ku-	ku		xu	ku	ku	ku	ku	ku
9.6	kuṬ-	qu	ku	ku	ku	ku	ku	ku	ku
9.7	ke-	ke	ša	ke	ke	ke	ke	ke	ke
9.8	keṬ-	qe	ka	ge					
9.9	ko-	ko	šu	xo	ko	ko	ko	ko	ko
9.10	-k-	k	k	k	k	k			k
	-kk-	kk	k	(k)k,gg					kk
	-k#			k	kə	ku	k	ku	ku
10.2	h-	h	h	h	∅				
10.3	-h-	h, hh	h, hh	h	h	∅			∅,k̲,v
10.4	ɣ-	ɣ	?	ɣ	∅				
10.4	-ɣ-	ɣ	h	ɣ	∅				
10.4	-ɣ	ɣ	∅	ɣ	∅				
11.1	s-	s	š	š/#_{i,e}	∅				
11.1	s-	s	š	s	∅				
11.2	s	s	š	s	c	c	c	c	c,v,y,∅
11.2	-s#	s	š	s	y	y	y	y	y
11.2.1.7	-ps?	ps	pš	j					ñc
11.3	c-	c	z, s	c	c	c	c	c	c
11.4	-c-	c	s	s	c	-c-, --j-			c
	-cc-			s	cc				cc

Table A Dorsal Consonants and Related Correspondences

7.2.1.7 El. —. Br. xan- ‘to give birth to’ (App. 3, C31). Kx. xadd ‘child, young animal or plant’. Mt. qade ‘son’. PPD *kaṉṯu (< *kaṉ+*tu) ‘young of various animals’; *kanu ‘to give birth’ [DEDR 1411]. PZ *qan.

7.2.1.8 El. —. Br. xan- ‘to see, find’ (App. 3, C30.2). Kx. xana ‘to be pleasant to the eye’. PPD *kāṇ ‘to see, consider; appear’ [DEDR 1443]. PZ *qaṇ.

7.2.1.9 El. —. Br. xāxar ‘fire; anger, jealousy’ (App. 3, C40). Kx. xāya ‘to dry up’. Mt. qāye ‘to become dry, wither’, qeyre ‘to be boiled’. PPD *kāy ‘to grow hot, cook’ [DEDR 1458]. PZ *qay.

7.2.2 The following words in Brahui have no known cognates in Elamite or North Dravidian. They have cognates in PPD with ka- not followed by a retroflex or alveolar consonant. This presumably reflects PZ *qa-.

7.2.2.1 El. —. Br. xarmā ‘wolf’ (App. 3, C35). Parji garum gōli ‘fox’ [DEDR 1289].

7.2.2.2 El. —. Br. xal ‘stone, boulder’ (App. 3, C25). PPD *kal ‘stone, pebble’ [DEDR 1298].

*7.3 PZ *qu-*

7.3.1 PZ *qu- shows the expected reflexes, except for Brahui where xall- is attested. In Brahui, numerous stems fell together as xall- and, by analogy, this pulled in verbs where *xull- would be expected.

7.3.1.1 El. [C085] hulpa- ‘to erect’ (EW, 714: hu-ul-ba-h ‘ich richtete auf’). Br. xall- ‘to set in ground’ (App. 3, D67) [no DEDR]. PEl *qul.

7.4 Brahui words with initial xu-

7.4.1 The expected reflex of PZ *qu- in Brahui is xu-. Due to idiosyncratic changes in Brahui, the expected reflex of PZ *ku- in Brahui is also xu-. As a result, unless there is a cognate in Elamite, Kurux, or Malto, there is no way to distinguish reflexes of PZ *qu- from those of PZ *ku- in Brahui. The following is the list of such terms in Brahui that have cognates in Peninsular Dravidian, which also does not distinguish between reflexes of *k and *q.

7.4.1.1 El. —. Br. xunz- ‘to move in sitting position’ (App. 3, A7). Te gunju ‘to pull, writhe’ [DEDR 1648 (?)]. Probably Iranian; see ILEB, F97.

7.4.1.2 El. —. Br. xutt- ‘to dig, probe’ (App. 3, C55). PPD *kuttu ‘to stab, pierce, bore’ [DEDR 1719].

7.4.1.3 El. —. Br. xulī-, xul- ‘to fear’ (App. 3, C50); xulīs ‘fear’ (App. 3, C50.1); xulkun ‘soft, soft-hearted, tractable, submissive, worn away’ (App. 3, C50.2). PPD *kul- ‘to shake, tremble’ [DEDR 1806].

7.4.1.4 El. —. Br. xurrum ‘grain pit’ (App. 3, C54). PPD *kuṟal ‘any tube-shaped thing’, kuṟi ‘pit, hole, depression’ [DEDR 1818].

7.4.1.5 El. —. Br. xull- ‘to pierce, stab’ (App. 3, C51). PPD *kuḷi ‘to pierce’ [DEDR 1833].

*7.5 PZ *qe-*

7.5.1 PEl /*e/ regularly changes to /a/ or /i/ (rarely remaining /e/, when stressed?) in both Elamite and Brahui. Dravidian sources regularly keep the vowel.

7.5.1.1 El. [B019] hap- ‘to hear, listen’, cited in the reduplicated form hahp- (EW, 590: ha-h-pu-uš ‘er erhörte’). Br. xaf ‘ear; tribute’ (App. 3, C24). Kx. xebda ‘ear’, Mt. qeθwu ‘ear’. The metathesis of wθ to θw in Malto is regular. PPD *kevi ‘ear’, etc. [DEDR 1977a]. Also PDr qēl- ‘to hear, listen, ask’: Mt. qēGe ‘to ask’ [DEDR 2017a] for closer semantics. PZ *qel(p/q)-.

7.5.1.2 El. [E114] hipa ‘to subjugate’ (EW, 668: hi-pa-qa ‘Unterwörfen (?)’) or the foregoing hap- in the sense ‘listen, obey; pay tribute’. Br. xafī ‘one who pays tribute to a chief, vassal, subject’ (App. 3, C24.1) [no DEDR]. PEl *qep.

7.5.1.3 El. [B028] hilla- ‘to take, rob’ (EW, 660: hi-il-la-áš ‘er entnahm, nahm an sich’). Br. xall- ‘to uproot, gather’ (App. 3, C26) [DEDR 1373]; cf. xall- ‘to steal’ (App. 3, C27) [DEDR 1372]; see §7.2.1.2. PEl *xel. There is some confusion among the Brahui homonyms.

7.5.1.4 El. —. Br. xumb ‘embrace; two arms full’ (App. 3, C52). Kx. xec- ‘to clasp in the arms, embrace’. Mt. qemde ‘to carry on the side’ [DEDR 1558]. PZ *qem. Brahui commonly shifts vowels before /m/ to /u/.

7.5.1.5 El. —. Br. xīsun ‘red; gold’ (App. 3, C43). Kx. xẽso ‘red; blood’. Mt. qēso ‘red’ [DEDR 1931]. PZ *qec.

*7.6 PZ *qo-*

7.6.1 PEl /*o/ regularly changes to El. /a/ and to Br. /a/ or /o/.

7.6.1.1 El. [A053] halp- ‘to beat, strike’ (EW, 605: hal-pi-iš ‘er schlug’). Br. xall- ‘to strike’ (App. 3, C28.1). PPD *koḷ ‘to strike, hit, wound’ [DEDR 2152, not 2132]. PZ *qoḷ.

7.6.1.2 El. [A053] halp- ‘to die, kill’ (EW, 605: hal-pi ‘das Sterben, Gematzel, Massaker’, etc.). Br. xall- ‘to kill’ (App. 3, C28.2). Possibly Br. xał ‘pain’ (App. 3, C29). PPD *kol ‘to kill, murder’ [DEDR 2132]. PZ *qol.

7.6.1.3 El. [B024] hara- ‘to press’ (EW, 624: ha-rák ‘es wurde gepreßt, aufgedrückt, geprägt’). Br. xarr- ‘to sprout’ (App. 3, C36), xarrun ‘green, blue; fruitful’ (App. 3, C36.1). Kx. xōra (xurya) ‘to shoot out new leaves’. Mt. qōroce ‘to sprout’. PPD *koṛu ‘shoot, sprout, anything young or tender’ [DEDR 2149]. PZ *qor.

7.6.1.4 El. —. Br. xoš(k)ing ‘to rub; interfere with’ (App. 3, C49). Kx. xõsa (past xũsyas) ‘to pulverize by pounding; harass’. Mt. qōse ‘to pound, smash’. [DEDR 2189]. PZ *qos.

7.6.1.5 El. —. Br. xō ‘cooking pot’ (App. 3, C45). Ta. kōy ‘vessel for taking out toddy’. Toda kwa•y ‘bamboo pot used a ti•-dairy’ [DEDR 2225]. PZ *qoy.

*7.7 PZ -*q-*

7.7.1 The patterns for non-initial /-*q-/ have much the same range as for initial /*q-/. However, the number of attestations in any one environment is limited, and a general solution is still provisional.

7.7.1.1 El. [A125] šilha- ‘to be strong, able’. Br. —. PPD *kil- ‘to be able’. See §9.4.1.2 for full discussion.

7.7.1.2 El. [C152] suku- ‘to obliterate’ (EW, 1102; su-ku-uš ‘er strich aus, tilgte’). Br. —. Kx. cox^{ə}ʔa (past cokk^{h}a) ‘to pluck, [pull off (fruit)], cull (fruit, flowers, useful leaves)’. Mt. coGe (past coq-) ‘to pluck off, set free’. [DEDR 2644]. PZ *coqq-.

7.7.2 While cognate, the following Brahui words’ attestation of -*q- may be influenced by the preceding stop. Kurux and Malto have dorsal harmony and do not allow velars adjacent to a vowel next to a uvular, i.e., qVq or kVk are allowed, but not qVk or kVq.

7.7.2.1 El. —. Br. xāxō ‘crow’ (App. 3, C41). Kx. xāxa ‘crow’. Mt. qāqe ‘crow’. PPD *kākkay ‘crow’ [DEDR 1425]. PZ *qaqa. Due to the obvious onomotopoeia, this term is not good evidence for cognation.

7.7.2.2 El. —. Br. xāxūr ‘demoiselle crane [bird]’ (App. 3, C42). PPD *kokku ‘crane, heron’ [DEDR 2125]. PZ *qoqu.

8 PALATAL CORRESPONDENCES

*8.1 PZ *ḱa-*

8.1.1 The initial dorsals have a palatal series (or /ky/ clusters). In PEl, /*ḱ/ has been retained except for a change to /*q/ when there is a following backed consonant. Elamite regularly changes the /*ḱ/ to /z/ or /s/, and the /*q/ to /k/. Brahui always simplifies to /k/,

while the regular PDr correspondence is /*ḱ/, which undergoes its regular changes to PKxMt /*k/ and PPD /*c/.

8.1.1.1 El. [A098] sa- 'to go, travel' (EW, 1051: sa-ak 'er zog fort, reiste'). Br. kā+ (present base of hining) 'to go, depart' (App. 3, C7). Kx. kāla/kaʔ- (past kera) 'to go, lead to (as a road), progress favorably, go on, continue, perish, pass (of time), come to an end'. Mt. kāle (no past) 'to go, come to' [DEDR 1419], and the regular PPD development *cāy- 'to go, move' [DEDR 2430]. PZ *ḱa.

8.1.1.2 El. [E179] zah- 'to die' (EW, 1059: sa-h-ri, and 1275: za-h-ri 'Wäger (?)' / 'mort, destruction' (Lambert)). Br. kah- (past kask) 'to die, die down' (App. 3, C5). Kx. kʰeʔa (past keccas) 'to die, fall out of use'; kʰiʔū 'mortal'. Mt. keye (kec-) 'to die'; keyu 'mortal'. PPD *cā/a (with variants) 'to die'. Ta. cā (cāv-/cākuv-, cett-) 'to die'. Te. caccu (cā-, cāv-) 'to die, wither'. [DEDR 2426]. PZ *ḱah. The Elamite citation of this important Dravidian stem occurs as a descriptive apposition of the god Inšušinak as the judge of the dead. The Zagrosian hypothesis with the Brahui and Dravidian cognates strongly supports Lambert's reading as 'Death (personified)'.

*8.2 PZ *ḱu-*

8.2.1.1 El. [C153] suma- 'to work (hard)' (EW, 1102: su-man-ra 'einer, der (schwer) arbeiten läßt'). Br. kubēn 'heavy, difficult, serious' (App. 3, C17). Kx. kumˀʔa (past kummʔya) 'to take and carry on head, make oneself responsible for, confess, be pregnant as result of a fault'. Mt. kume 'to take on one's head, accept terms, take charge of'. PPD *cuma- 'to bear, be heavy' [DEDR 2677]. PZ *ḱum-.

8.2.1.2 El. [C125] zul 'water' (EW, 1314: zu-ul 'Wasser(?)'). Br. kul- in cakkul 'small spring' (App. 3, D52B); see §9.10.1.2 for *cak 'small'. PEl *ḱul. Note PPD *cil- 'water to flow, ooze, drizzle' [DEDR 2569].

8.2.1.3 El. [D081] sunpal 'a quality of garments (in folds, pleated?)' (EW, 1107: su-un-pa-lak-ki 'Eigenschaft von Gewändern, vielleicht in Falten, plissiert (?)'). Br. kunnal 'curl, ringlet; curled up, coiled' (App. 3, D55). [no DEDR]. PEl *ḱun. The strong Brahui parallel would favor a reading of 'rolled edge' or 'with a curled fringe' in Elamite.

8.3 Brahui Loans in ku- and ko-

8.3.1 The following terms have initial ku- where the regular, but unattested, reflex would be PZ *qu > *xu-. If from PZ *ḱ, Brahui would have ku-, but PPD would have *cu-. However, all have ku-. Since many have reasonable etymologies as loanwords, including PDr origins through IA, the entire group is considered to be loans into Brahui. See Appendix 3.

8.3.1.1 Br. ku(ḍ)ḍi 'hut' (App. 3, A6) [DEDR 1655].
8.3.1.2 Br. kuʈʈ- 'to pound' (App. 3, C21) [DEDR 1671].
8.3.1.3 Br. kuʈʈa- 'bruised' (App. 3, C21.1) [DEDR 1671].
8.3.1.4 Br. kuraɾa 'inflammation' (App. 3, C19) [DEDR 1780 (?)].
8.3.1.5 Br. kūʈ 'shaven' (App. 3, C23).
8.3.1.6 Br. kūʈi 'hornless' (App. 3, C23.1) [DEDR 1914 (?)].

8.3.2 The following words in ku- or kō-, not followed by a backed consonant, are also considered to be loans.

8.3.2.1 Br. kūlitī (< kūlī) 'small mud corn-bin' (App. 3, D60). Probably a loan from IA kūlhī through Balochi; see ILEB, I179. [no DEDR].
8.3.2.2 Br. kūž- 'to shrink in fear'. (App. 3, C20.1). From Elfenbein (1983: 199). Discussed in Emeneau (1997). The only other term in the core vocabulary with /ž/ is the doublet žall/yall 'gravel', supporting the conclusion that this is a loanword.
8.3.2.3 Br. kōndō 'on all fours, bent double'. (App. 3, C16) [DEDR 2054a]. If cognate, an initial *x- would be expected.

*8.4 PZ * ḱuṬ-*

8.4.1 The tension between the fronted dorsal and the backed coronal produces some specific results in PEl. The initial /*ḱ-/ becomes /*q/, which becomes /k-/ in both Elamite and Brahui, and remains so in all cases. In Brahui this /k-/ does not change to /x-/ before /u/. Dravidian reflexes are regular for PDr /*ḱ-/.

8.4.1.1 El. [C114] kura- 'roasted' (EW, 518: ku-ra-ak 'versengt, geröstet (?)') Br. —. Kx. kuṛa (past kuṭṭa) 'to be hot, grow warm, become hot, be heated; cook on live embers, bake on an open fire'. Mt. kuṛe (kuṭ-) 'to burn, roast, sear'; kuṛnare 'to be hot or warm'; kuṛni 'warm, hot'. PPD *cuɽ- 'to be hot, burn' [DEDR 2654]. PZ *ḱuṛ.

8.4.1.2 El. —. Br. kūr- 'to roll up (tr.)' (App. 3, C22). Kx. kūra 'to put on and tie a sari around one's waist'. Mt. kuṛge 'to roll up, wrap up'. PPD *cur- 'to whirl, curl, roll up' [DEDR 2684]. PZ *ḱuṛ.

8.4.1.3 El. —. Br. kurr- 'to keep back, shrink from' (App. 3, C20). PPD *curu(ŋk)- 'to shrink, contract, shrivel' [DEDR 2687]. PZ *ḱuṛ.

9 VELAR CORRESPONDENCES

*9 PZ *ka-*

9.1.1 Note the regular correspondence of PEl /*k/ which becomes /š/ in Elamite and /k/ or /x/ in Brahui depending on the following vowel. It is /*k/ in all Dravidian attestations.

9.1.1.1 El. [A120] šasa- 'to travel (away)' (EW, 1139: šá-sa-ak 'es wurde fortgerissen'). Br. kasar 'way, path, road; intercourse; course, resource' (App. 3, D35). [no DEDR]. PEl *kasa.

9.1.1.2 El. [A119] šarit 'shore, bank; reed thicket' (EW, 1138: ^{h}šà-ri-ut 'Ufer'). Br. karrak 'shore, bank' (App. 3, A5). PPD *kar(ay) 'shore, bank, border' [DEDR 1293]. PZ *kar-. In spite of its citation in the DB, there are difficulties with the Elamite: why <ŠÀ> (which could be read lip-) instead of <ŠÁ>, and does it refer to the bank or what grows on the bank (reed thicket)? Assuming that the reading of the Elamite as šarit is correct, it provides the first firm explanation for the form in Brahui.

9.1.1.3 El. [C176] šahši- 'to cut, mow, trim' (EW, 1122: šá-h-ši-qa 'geschnitzt, geschneidert'). Br. karɣ- 'to shear, crop down, mow down' (App. 3, C6). Kx. xerca (past xircyas) 'to rub off, scour'. Mt. qerce 'to scrape', qēre 'to shave'. [DEDR 1564]. PZ *kar.

9.1.1.4 El. [E243] šalhar 'a kind of shade tree' (EW, 1112: giš.ša-al-ha-ar^{lg} 'Platanen (?)'). Br. kahērō 'the tree, *Ehretia obtusifolia*' (App. 3, D22). [no DEDR]. PEl *kalher. Note the loss of /l/ in Brahui.

9.2 The following three words are loans into Brahui

9.2.1.1 El. —. Br. kaland 'old pot' (App. 3, A3) [DEDR 1305 ?]. Loan from Balochi; see ILEB, E78.

9.2.1.2 El. —. Br. kallar 'saline soil' (App. 3, B1) [DEDR 1359 ?]. A widespread word in northwestern South Asia. I would agree with Burrow (1967: 41) that this is a loanword through Indo-Aryan from an original Dravidian term /*kalar/ 'saline soil' [DEDR 1359].

9.2.1.3 El. —. Br. kalp 'deceitful' (App. 3, A4). The regular reflex of PDr *qal- 'to steal' [DEDR 1372] is Br. xall- 'to steal'; see §7.2.1.2. Br. kalp is a direct loan from Balochi kəlp; see ILEB, E81.

*9.3 PZ *kaṬ-*

9.3.1 The following consonant backs the vowel in Brahui allowing the back vowel variant /x/.

9.3.1.1 El. [C176] šahši- 'male (horned ?) animal' (EW, 1121: šá-h-ši-ik-me-ne 'Geweihtier(e) (?)'). Br. A) xaŕ 'ram' (App. 3, C38); B) xaras 'bull, bullock' (App. 3, C33); see §11.2.1.1 for -as.

Kx. kaṛa ‘young male buffalo’. PPD *kaṯac- ‘male or young of buffalo or goat’ [DEDR 1123]. PZ *kaṭ. Note that the PPD form is derived from the compound in Br. B, which implies that the compound is PZ *kaṭas, combining this root with that in §11.2.1.1.

9.3.1.2 El. [C183] šarnu- ‘to apportion’ (EW, 1116: $^{LÚ.}$šá-ár-nu-up-pu ‘intended recipients of apportionment’). Br. xarr- ‘to proceed on foot’ (App. 3, C37). Kx. kaṭṭa ‘to cross, pass, overtake’. Mt. kaṭe ‘to exceed, pass, cross’. PPD *kaṭa ‘to pass, exceed, cross; go, proceed’ [DEDR 1109]. PZ *kaṭ. The semantics link on the concept of transfer or process.

9.3.2 The following word is attested in Brahui with no cognates in Elamite, Kurux, or Malto. It has cognates in PPD with a following alveolar consonant. It is not certain if the PZ parent form is /*qaṭ/ or /*kaṭ/.

9.3.2.1 El. —. Br. xar ‘angry’ (App. 3, C32). PPD *kar̲ ‘to resent, get angry with; rancour, enmity’ [DEDR 1396].

*9.4 PZ *ki-*

9.4.1 The reflexes are as expected, but Tamil and Malayalam may have reflexes in /ci-/ from an independent change. Note the position of these terms in the DEDR. They are cited with terms in ki- [1509–1625], not ci- [2488–2641].

9.4.1.1 El. [C190] šiška- ‘to draw off, subtract’ (EW, 1161: ši-iš-qa-qa ‘abgezogen, subtrahiert’). Br. kišk- ‘to pluck, break off, separate, settle’; kih- ‘to break (off)’ (App. 3, C12(.1)). Kx. kicc- ‘to break into small pieces’ [DEDR 1513]. PZ *kisk.

9.4.1.2 El. [A125] šilha- ‘to be strong, able’ (EW, 1162: šil-ha-h ‘stark, kräftig; ich stärkte, festigte’, etc.). El. [A126] šillak ‘firm ground’ (EW, 1164 šil-la-qa ‘das Feste; der gewachsene Boden’). Br. —. PPD *kil-: Ta. kil- ‘to be able’, kipu, kepu ‘strength, power, ability’. Ma kelpu ‘strength, power’. [DEDR 1570]. PZ *kil.

9.4.1.3 El. —. Br. kirēng ‘abuse’ (App. 3, C13). PPD *kir̲ ‘to cry (as an animal), shout, scream’. DEDR 1590]. PZ *kiṛ. Brahui may go with §7.5 as a uvular.

9.4.1.4 El. __. Br. kirrēf- ‘to turn a handmill’ (App. 3, C15). PPD kir̲u ‘to spin, go round and round; be giddy’ [add to DEDR 1595]. Term discussed in Emeneau (1997) from new word in Elfenbein (1983: 199). PZ *kiṛ.

9.4.1.5 El. —. Br. kirk ‘grudge’ (App. 3, C14). PPD *kir̲ ‘to be angry with, detest’ [DEDR 1597]. PZ *kiṛ.

9.4.1.6 El. —. Br. kīš ‘pus’ (App. 3, C11). Kx. kitta ‘to rot’. Mt. kite ‘to rot’. PPD *ki ‘pus, snot; to rot’ [DEDR 1606]. Pre-Brahui *kiti, with *ti > š (?). PZ *kit.

*9.5 PZ *ku-*

9.5.1 The expected reflex in Brahui of PZ /*ku-/ is /*xu-/ as is the reflex of PZ /*qu-/. If there are no clear cognates with Elamite, Kurux, or Malto, they cannot be distinguished. Thus, PZ *qu and *ku fall together as xu- in Brahui; see §7.4 for the list of such forms in Brahui. The following term is clearly *ku, since it has a cognate in Malto.

9.5.1.1 El. —. Br. xurrukāw ‘a snore’ (App. 3, C53). Mt. kur-kur ‘a call to a dog’. PPD *kur- ‘to bark, shout; noise’ [DEDR 1796]. PZ *kur.

*9.6 PZ *kuṬ-*

9.6.1.1 El. [C113] kumba ‘to eat’ (EW, 512: kúm-ba-qa ‘es ist gegessen worden’). Br. kuning ‘to eat, drink, bite; suffer, endure’ (App. 3, C18). PEl *kuṇ. A striking correspondence. While a connection with PKxMt *ōṇ- ‘to drink, eat [rice]’, Kx. ōna (past oṇḍas) ‘to drink, eat (rice)’, Mt. ōne (past onḍ-) ‘to drink, be colored’, and with PPD *uṇ- ‘to eat [a meal], drink, experience’ [DEDR 600] may be possible, the phonology would be complex and is unjustifiable at this time.

*9.7 PZ *ke-*

9.7.1.1 El. [A117] šara ‘under, below’ (EW, 1133: šá-ra ‘unter, unten, hinab’). Br. keraɣ ‘under, below; bottom’ (App. 3, C9) [DEDR 1619]. PZ *keraɣ. PPD has /*kīṛ/ raising the possibility that one source of PPD * ṛ [ɻ] is the simplification of PZ /*rɣ/.

*9.8 PZ *keṬ-*

9.8.1.1 El. [B096] kandu ‘storehouse’ (EW, 430: $^{h.}$kán-du ‘Speicher’). Br. gēd ‘roofed enclosure for animals; pent in’, gēd kanning ‘to bring animals under shelter’ (App. 3, D9) [no DEDR]. PEl *keṇṭ-.

*9.9 PZ *ko-*

9.9.1.1 El. [C202] šulum ‘grain [in field]’ (EW, 1178: $^{h.}$šu-lu-um ‘Getreidestand, Kornernte (?)’). Br. xōlum ‘wheat’ (App. 3, C48), Ta. kūlam ‘grain [in general], especially the traditional 18 kinds’ [DEDR 1906]. Note remainder of DEDR 1906: Pengo kūli ‘paddy [rice in field, unhusked rice]’, etc. PZ *kolum. This provides final confirmation of the connection between xōlum and kūlam and solves the question of the origin of Br. xōlum. The shift of o > u in Tamil is regular before a.

9.9.1.2 (?) El. [C191] šil ‘(large)(round) container’ (EW, 1155: ši-el ‘Faß’). Br. xōl ‘womb, offspring’ (App. 3, C47). Kx. kūl ‘belly, stomach, womb’. Mt. kōli ‘abdomen’ [DEDR 2244]. PZ kol. If the Elamite term is truly cognate, the common u > i shift has applied.

*9.10 PZ *-k-*

9.10.1.1 El. [E261] šukur ‘singer, reciter’. Br. sugguŕ ‘bard, balladmonger, poet [archaic]’ [no DEDR]. PPD *ugg ‘to repeat (sound), utter’ [DEDR 571]. See §11.1.1.1 for full discussion. PEl *suk-kur. Strikingly similar in form and meaning; if valid, possibly a loanword.

9.10.1.2 El. [C161] zaka ‘a small measure’ (EW, 1283: za(?)-qa ‘kleine Maßbezeichnung von 1/24 QA’). Br. cak- ‘small’ in cakkul ‘small spring’; see §8.2.1.2 and App. 3, D52B. PEl *cak.

10 GLOTTAL CORRESPONDENCES

10.1.1 Proto-Dravidian lost all glottals initially, and in most other locations as well. The only position where any reflexes of a PDr glottal exist is at the end of an initial syllable with a stressed short vowel. Here, a complex attestation points to a possible PPD *h, which is found in the deictic stems and in a few verbs. As a result, only Elamite and Brahui forms directly attest an /h/ in other positions; /h/ in Kurux comes from Munda or Indo-Aryan influences.

*10.2 PZ *h-*

10.2.1 PEl /*h/ is retained in Elamite and Brahui. However, in AE /h/ is regularly lost, and in Brahui many dialects have [ʔ].

10.2.1.1 El. [A002] ha ‘to/for it’ (EW, 572: ha ‘hier, “generalized resumptive pronoun” (Hallock)’). Br. ha- [DEDR 296]. PEl *ha. In Elamite, ha immediately precedes the finite verb, which is where the indirect object is also placed. Since ha has been translated as ‘to/for him/them’, Hallock (1969: 685) analyzed it as a pronominal dative form. In Brahui, ha always precedes the finite verb and indicates that the subject retains the accusative object temporarily; taring ‘to give’, hataring ‘to bring (i.e., take it and then give)’. This usage corresponds to SDr koṇṭu (< koḷ) as in Tamil vā ‘come!’, koṇṭuvā ‘bring!’. In spite of closely parallel usage, SDr koḷ does not seem to be directly cognate with Brahui ha.

10.2.1.2 El. [A240] hidu ‘adult female caprid’ (EW, 656: hi-du ‘Schaf, “ewe”’; Hallock (1969: 696) ‘adult female goat’). Br. hēt ‘she-goat’. Kx. ēṛa ‘she-goat’, Mt. ēṛe ‘she-goat’. PPD *yāʈu ‘goat, sheep’ [DEDR 5152]. PZ *heṭ. Elamite <du> is a regular reflex of PEl /*t/.

10.2.1.3 El. [A061] hipš- ‘to fear’ (EW, 766: ip-ši-iš ‘sie fürchteten’; EW, 722; hu-up-ša-an ‘es fürchte, meide!’). Br. hīj- ‘to fear’ [DEDR 55]. PEl *hips (?). Note PPD *añcu ‘to fear’ [DEDR 55].

10.2.1.4 El. [A016] elma ‘to think, ponder’ (EW, 395: el-ma (also ul-ma) ‘ich dachte, erwog, ersann’) with fused auxiliary (ma). Br. hēl ‘knowledge, wisdom’. Kui ēlu, elki ‘mind, reason, thought, wisdom, understanding, remembrance’. Kuwi ēdu ‘wisdom’. [DEDR 912]. PZ *hel.

10.2.1.5 El. [A057] hane- ‘to love’ (EW, 617: ha-ni-iš ‘er liebte’). Br. haning- ‘to copulate (of human beings)’. Note PPD *aɳ- ‘to approach, mix’. [DEDR 120]. PEl *han.

10.2.1.6 El. —. Br. hamp- ‘to load up (and go), start’. Kx. amba ‘to let go, send away, pardon, leave a place’. Mt. ambe ‘to leave off, forsake’. PPD *aɲupp ‘to send’ [DEDR 329]. PZ *hanupp.

10.2.1.7 El. —. Br. hunn- ‘to look at/for, wait for, consider’. PPD *uɲɲ ‘to think, consider, observe’ [DEDR 727]. PZ *hunn.

10.2.1.8 El. —. Br. hīn- ‘to go, depart, flow’. PPD *eyt ‘to reach, obtain’. [DEDR 809]. PZ *hey.

10.2.1.9 El. —. Br. hōɣ- ‘to weep, cry’. Kx. olᵒxa ‘to bewail, lament’. Mt. olɢe ‘to cry, weep’. PPD *oli ‘to sound, make a noise’ [DEDR 996]. PZ *holɣ.

10.3 PZ --h-*

10.3.1.1 El. [E179] zah- ‘to die’. Br. kah- (kask) ‘to die, die down’ (App. 3, C5). Kx. kʰeʔa (past keccas) ‘to die, fall out of use’; kʰiʔū ‘mortal’. Mt. keye (kec-) ‘to die’; keyu ‘mortal’ [DEDR 2426]. See §8.1.1.2 for full discussion.

10.3.1.2 El. [E338] paha ‘mule, hinney’ (EW, 119: pa-ha ‘Maulesel(?)’). Br. bahir ‘donkey, mule’ [no DEDR]. PEl *pah. No explanation for Br. /b/.

10.3.1.3 El. [E243] šalhar ‘a kind of shade tree’. Br. kahērō ‘the tree, *Ehretia obtusifolia*’ (App. 3, D22) [no DEDR]. See §9.1.1.4 for full discussion.

10.3.1.4 El. —. Br. kih- ‘to break (off)’, variant of kišk- ‘to pluck, break off, separate, settle’ (App. 3, C12.1). See §9.4.1.1 for full discussion.

10.3.1.5 El. [A225] ruh ‘man’ (EW, 1044: ᵛru-h ‘ein, der Mann’). Br. arē (pl. arisk < *areh+k) ‘male individual, person, husband’. Cf. [DEDR 917 (?)]. Brahui has a regular pattern of *h becoming s/š after a vowel in the first syllable and before a stop; note §8.1.1.2 (kask, past of kah-). An example of aphesis, see §3.5.2.

*10.4 PEl *ɣ*

10.4.1.1 El. [A117] šara ‘under, below’. Br. kēraɣ ‘under, below, bottom’ (App. 3, C9) [DEDR 1619]. PEl *keraɣ. See §9.7.1.1 for full discussion.

10.4.1.2 El. [C182] šari ‘to pour, cast (metal)’. Br. šaɣing ‘to put in, pour in/out, put (on/around / down/out)’. Note DEDR 866. PEl *šelq-. See §11.1.1.3 below for full discussion.

10.4.1.3 El. [E004] ahiš ‘pasture’ (EW, 34: a-h-iš ‘Weidegrund(?)’). ? Br. āɣut ‘the grass, *Sonchus oleracus*, used as pasture’ [no DEDR]. PEl *aɣ-.

10.4.1.4 El. —. Br. hōɣ- ‘to weep, cry’. Kx. olᵊxa ‘to bewail, lament’. Mt. olɢe ‘to cry, weep’. PPD *oli ‘to sound, make a noise’ [DEDR 996]. PZ *holɣ. See §10.2.1.9.

11 ALVEOPALATAL CORRESPONDENCES

*11.1 PZ *s-*

11.1.1.1 El. [E261] šukur ‘singer, reciter’ (EW, 1177: šu-ku-ri ‘Sänger (?)’; EW, 1189; šu-uk-ki-it ‘Rede, Wort’). Br. sugguṙ ‘bard, balladmonger, poet [archaic]’. PPD *ugg ‘to repeat (sound), utter’ [DEDR 571]. PZ *sukk. All the PPD attestations are South Dravidian where the initial c is commonly lost.

11.1.1.2 El. [C179] šali ‘pole’ (EW, 1127: ša-li ‘Pfahl’). Br. sal(ī) ‘pole, stand’. PPD *ēl- ‘to rise, ascend’ [DEDR 916]. PZ *sali. See Emeneau (1968) for the reasoning behind this etymology on the Dravidian side.

11.1.1.3 El. [C182] šari ‘to pour, cast (metal)’ (EW, 1137: ša-ri-h ‘ich goß, ließ gießen’). Br. šaɣing ‘to put in, pour in/out, put (on/around /down/out)’. Note Kx. elkha ‘to pour liquid out (by tilting a vessel standing on the ground)’, Mt. eqe ‘to pour out from a vessel’ [DEDR 840] and Ta. erru [< el+tt] ‘to throw out (water from a vessel)’, etc., esp. Ka eṟe ‘to pour any liquids, cast (as metal)’ [DEDR 866]. PZ *selq.

*11.2 PZ -*s(-)*

11.2.1.1 El. [A001] aš ‘cattle’ (EW, 84: áš ‘Vieh, Herde’). Br. xar-as ‘bull, bullock’ (App. 3, C33); note §9.3.1.1 for xaŕ-. Kx. ōy ‘cow’, Mt. ōyu ‘cow, ox’; PPD *ā(y) ‘cow’ [DEDR 334]. PZ *as.

11.2.1.2 El. [A202] maškar ‘height’ (EW, 894: maš-kar-ni ‘seine Höhe’). Br. baš ‘up’ [DEDR 4841]. PEl *mes. Br. *m > b before front vowels is regular.

11.2.1.3 El. [C332] muši ‘glazed’ (EW, 958: mu-ši-a ‘aus lasierter Terracotta’). Br. bis- ‘to bake’ [DEDR 5517]. PEl *wis. El. *w > m is regular. Note PDr *weC ‘to be hot, cook’, where C varies {k, c, v, y, ∅} [DEDR 5517]. PZ *wes (?).

11.2.1.4 El. [C190] šiška- ‘to draw off’. Br. kišk- ‘to pluck, break off, separate, settle’ (App. 3, C12). Kx. kicc- ‘to break into small pieces’ [DEDR 1513]. PZ *kisk. See §9.4.1.1 for full discussion.

11.2.1.5 El. [C312] maštukli ‘covering, garment’ (EW, 896: máš-tuk-li ‘Decke, Kleidungsstück’). Br. must ‘covering’ [no DEDR]. PEl *most (?).

11.2.1.6 El. [E027] išti ‘meat(?)’ (EW, 746: i-iš-ti ‘Fleisch(?)’). Br. sū ‘meat’ [DEDR 3373]. PPD *ū, *tū ‘flesh, meat’ [DEDR 728, 3373]. PZ *(i)stu (?). Note possible initial consonant cluster.

11.2.1.7 El. [A061] hipš- ‘to fear’. Br. hīj- ‘to fear’ [DEDR 55]. See §10.2.1.3 for full discussion.

*11.3 PZ *c-*

11.3.1.1 El. [E227] zin ‘small child’ (EW, 1291: zí-in ‘Kleinkind, Säugling’). Br. cuna ‘child’; cunak ‘small’ [DEDR 2594].

11.3.1.2 El. [C161] zaka ‘a small measure’. Br. cak- in cakkul ‘small spring’. Note DEDR 2569. See §9.10.1.2 for full discussion.

11.4 PZ --c-*

11.4.1.1 El. [B025] hasu ‘to anoint’. Br. xass- ‘to shake, fling’ (App. 3, D70) [no DEDR]. See § 7.2.1.3 for full discussion.

11.4.1.2 El. [A120] šasa- ‘to travel (away)’. Br. kasar ‘way, path, road; intercourse; course, resource’ (App. 3, D35) [no DEDR]. See §9.1.1.1 for full discussion.

12 CONCLUSIONS

12.1 The goal of this article is to establish the validity of the Zagrosian Hypothesis where Proto-Elamitic (PEl) is inserted between Proto-Zagrosian (PZ) and Brahui. Restated, Brahui is closely related to Elamite and their shared ancestor is derived from PZ and cognate with Proto-Dravidian (PDr); see Figure 1. To demonstrate this, there must be innovations shared by Elamite and Brahui that are not shared with PDr or, secondarily, innovations in PDr not shared by Brahui and Elamite. This paper endeavors to show that such innovations exist in the inherited phonology of the dorsal consonants (palatals, velars, and uvulars). The limited corpus was chosen because it is unstable with innovations leading to complex changes; because it is new information; and because it has a compact set of data that could be presented as a discrete statement without overwhelm-

ing the reader. The focus is on Brahui and how it relates to Elamite and the Dravidian languages.

12.1.1 The first set of innovations is in PDr with the loss of all fricatives, with the partial exception of PZ /*h/ at the end of the initial stressed syllable with a short vowel (#(C)V̆h). This exception is realized in Old (and poetic) Tamil as <k̲> (āytam, ஃ),[6] and is primarily found in the deictic stems and a few irregular verbs; note §8.1.1.2. After vowels, PZ /*s/ becomes PDr /*c/ and when final becomes PDr /*y/; otherwise, it is lost. The main point here is that Brahui retains all inherited fricatives, PZ /*h, *ɣ, *s/, in all positions and has numerous cognates with Elamite; note §§ 10 & 11. Proto-Kurux-Malto loses these fricatives as part of the PDr innovation, clearly separating it from Brahui.

12.2 The second set of innovations is in the reflexes of PZ /*q/, particularly when initial. Critically, these are innovations shared by Brahui and Elamite. Proto-Elamitic innovated a shift of /*q/ to /*x/ except before /*i/. This is shared by Elamite and Brahui, but not by PDr which retains /*q/. The only complication is that Kurux has the same change. However, Malto has /q/, and the shift q > x is common, while x > q is less so. Kurux and Malto are closely related, showing massively parallel structures in all aspects of their grammars and lexicons, and have probably separated during the last 1,000 years. Thus, it follows that Kurux innovated /*q/ > /x/ late, and that this shift is separate from the parallel change in Proto-Elamitic, attested in Old Elamite by 2200 B.C. That they are separate is confirmed by the changes before /*i/. Proto-Elamitic kept /*qi/, which became /ki/ in Elamite and /gi/ in Brahui. In PKxMt, /i > e/ after uvulars, so Kurux's regular change (q >x) results in /xe/ in this case; see §7.1.2.1. Therefore, this is not a shared innovation, but rather two independent innovations of an unexceptional nature.

12.3 The third innovation involves PZ /*k/, /*ḱ/, and PEl /*x/ from the foregoing paragraph before a backed coronal (postalveolar/retroflex) consonant. In PEl, PZ /*k/ and /*ḱ/ fall together as PEl /*q/ before a backed consonant, while elsewhere PZ /*k/ and PZ /*ḱ/ remain unchanged. PEl /*x/ also reverts to /*q/ (or /*q/ does not change) in this environment. This fusion of the three phonemes in this environment is an innovation restricted to Elamitic. It is not found in Dravidian.

12.4 A fourth innovation concerns Elamite. Elamite innovated a shift from PEl /*k/ to El. /š/ before all vowels. This innovation is not shared by the ancestor of Brahui and indicates that Brahui is not a lineal descendant of Elamite.

12.5 The number of cognate terms is not large. However, the number of source terms in Brahui is also highly restricted; the entire corpus for initial inherited back consonants is in Appendix 3, where 171 terms remain that are not known loans. In this list of initial dorsals, the number of cognates that Brahui has with Elamite is 28 (16.4%), while the number of cognates with Dravidian is 50 (29.2%). Combined, 67 terms (39.2%) are cognate with Elamite and/or Dravidian. In addition, 6 terms are cognate between Elamite and Dravidian that have no reflexes in Brahui. Given the fact that there are slightly over a thousand usable

6. This āytam has complex origins and does not always represent PZ *h.

Elamite terms in total and that DEDR has about 19,000 words and 5,500 entries, the proportion of cognates is much higher with Elamite.

12.6 These critical phonological correspondences strongly support the Zagrosian hypothesis. However, this work, in itself, is not definitive. There remains the rest of the phonology to be presented in detail and the supporting arguments from their morphologies to be incorporated. Moreover, this paper does not address pure chance, which at this depth of reconstruction becomes a major consideration. Nevertheless, the tightly integrated arguments and sets of data in this paper, together with those in McAlpin 2003, make an argument for cognation, in general, and the Zagrosian hypothesis, in particular, that stands on its own and must be disproved in detail. A prima facie case exists.

APPENDIX 1 TABLES OF PHONEMES

To make comparison easier, the phonemes for each language are presented in similar formats. In text, phonemes are presented between slashes and graphic units between broken brackets. Phonetic details are between square brackets. In these tables, the phonemes are from the International Phonetic Alphabet [IPA] except where noted, where the IPA equivalent is in brackets. Allophones and marginal phonemes are in parentheses.

Consonants	**Labial**	**Dental**	**Alveolar**	**Post-alveolar**	**Retro-flex**	**Alveo-palatal**	**Velar**	**Glottal**
Stops/Affricates	p b	t d		ʈ [ʈ͡] ɖ [ɖ͡]		c [t͡ɕ] ɟ [d͡ʑ]	k g	(ʔ)
Fricatives/Spirants	f v		s z	š [ʃ] ž [ʒ]			x ɣ	h
Lateral Fricatives			ɬ					
Nasals	m	n			(ɳ)	(ɲ)	(ŋ)	
Laterals			l	ɭ				
Trills/Taps/Flaps			r		ŕ [ɽ]			
Approximants	(w) [ʋ]					y [j]		

Vowels	**Front**	**Central**	**Back**
Close	i:	ɨ	u:
Mid	e: (ɛ)	(ə)	o: (ɔ)
Open	(æ)	(ɐ) a a:	

A. Brahui Phonemes and Major Allophones

Allophones and marginal phonemes are in parentheses.
IPA except where IPA noted in brackets.
Voiceless then voiced when paired.

Sources: Bashir 1991: 5
Elfenbein 1997b

Consonants	Labial	Dental	Alveolar	Post-alveolar	Alveo-palatal	Velar	Uvular	Glottal
Stops/Affricates	p	t	z [ʦ ʔ]*	d	(c [ʨ])	k		(ʔ)
Other Obstruants	b	(d)				g		
Fricatives/Spirants			s	š				h
Lateral Fricatives?			l/š**					
Nasals	m	n						
Laterals			l	ɭ				
Trills/Taps/Flaps			r					
Approximants	(w)				(y)			

Vowels	Front	Central	Back
Close	i		u
Mid	e		
Open		a	

B. Elamite Phonemes / Graphical Units

Sources: Stolper 2004: 70-73
Khachikian 1998: 5-10

* Elamite <z> is some sort of affricate (not [z]); Khachikian 1998: 7-8.
**One possible example, nul / nuš; Khachikian 1998: 9

Consonants	Labial	Dental	Alveolar	Post-alveolar	Alveo-palatal	Palatal	Velar	Uvular	Glottal
Stops/Affricates	p	t		t̲	c	ḱ	k	q	
Fricatives/Spirants			s				x ɣ		h
Lateral Fricatives			ɬ						
Nasals	m	n							
Laterals			l	ɭ					
Trills/Taps/Flaps			r						
Approximants	w				y				

Vowels	Front	Central	Back
Close	i		u
Mid	e		o
Open		a	

length?

C. Proto-Elamitic Phonemes

Consonants	Labial	Dental	Alveolar	Post-alveolar	Alveo-palatal	Palatal	Velar	Uvular	Glottal
Stops/Affricates	p	t		ṭ	c	ḱ	k	q	
Fricatives/Spirants			s					ɣ	h
Lateral Fricatives			ɬ						
Nasals	m	n		ṇ					
Laterals			l	ḷ					
Trills/Taps/Flaps			r	ṛ					
Approximants	w				y				

Vowels	Front	Central	Back
Close	i		u
Mid	e		o
Open		a	

length?

D. Proto-Zagrosian Phonemes

Consonants	Labial	Dental	Alveolar	Retro-flex	Alveo-palatal	Palatal	Velar	Uvular	Glottal
Stops/Affricates	p	t	t̲	ʈ	c	ḱ	k	q	
Fricatives/Spirants			s						(h)
Lateral Fricatives									
Nasals	m	(n)	n	ɳ					
Laterals			l	ɭ					
Trills/Taps/Flaps			r						
Approximants	w			ɻ	y				

Vowels	Front	Central	Back
Close	ī i		ū u
Mid	ē e		ō o
Open		a ā	

E. Proto-Dravidian Phonemes

Consonants	Labial	Dental	Alveolar	Retroflex	Alveo-palatal	Velar	Uvular	Glottal
Stops/Affricates	p	t	t̲	ʈ	c	k		
Fricatives/Spirants	v							(h)
Lateral Fricatives								
Nasals	m	(n)	n̲	ɳ	ñ	(ŋ)		
Laterals			l	ɭ				
Trills/Taps/Flaps			r, (r̲)					
Approximants				r̲ [ɻ]	y̲			

Vowels	Front	Central	Back
Close	ī i		ū u
Mid	ē e		ō o
Open		a ā	

F. Proto-Peninsular-Dravidian Phonemes (after DEDR)

APPENDIX 2 – REFLEXES AND CORRESPONDENCES

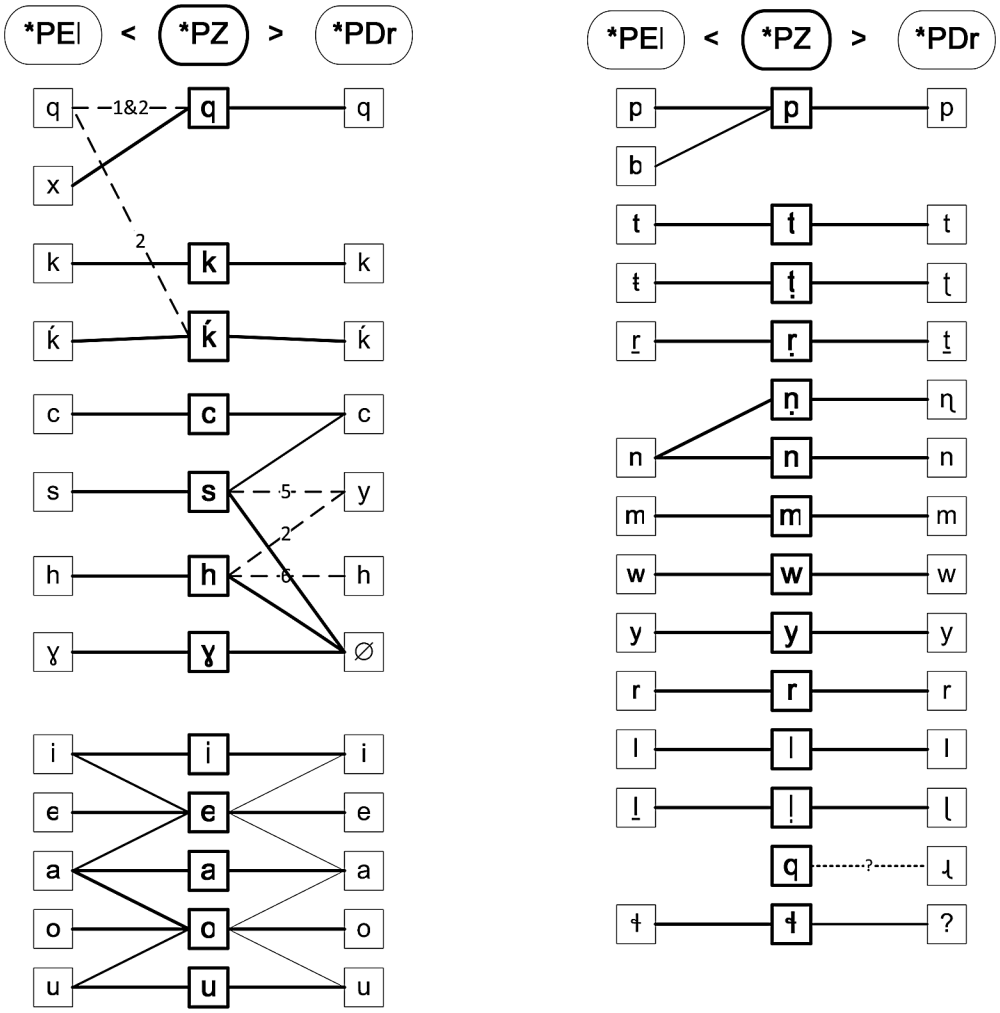

Diagram 2 – Proto Zagrosian Phonemes and Correspondences

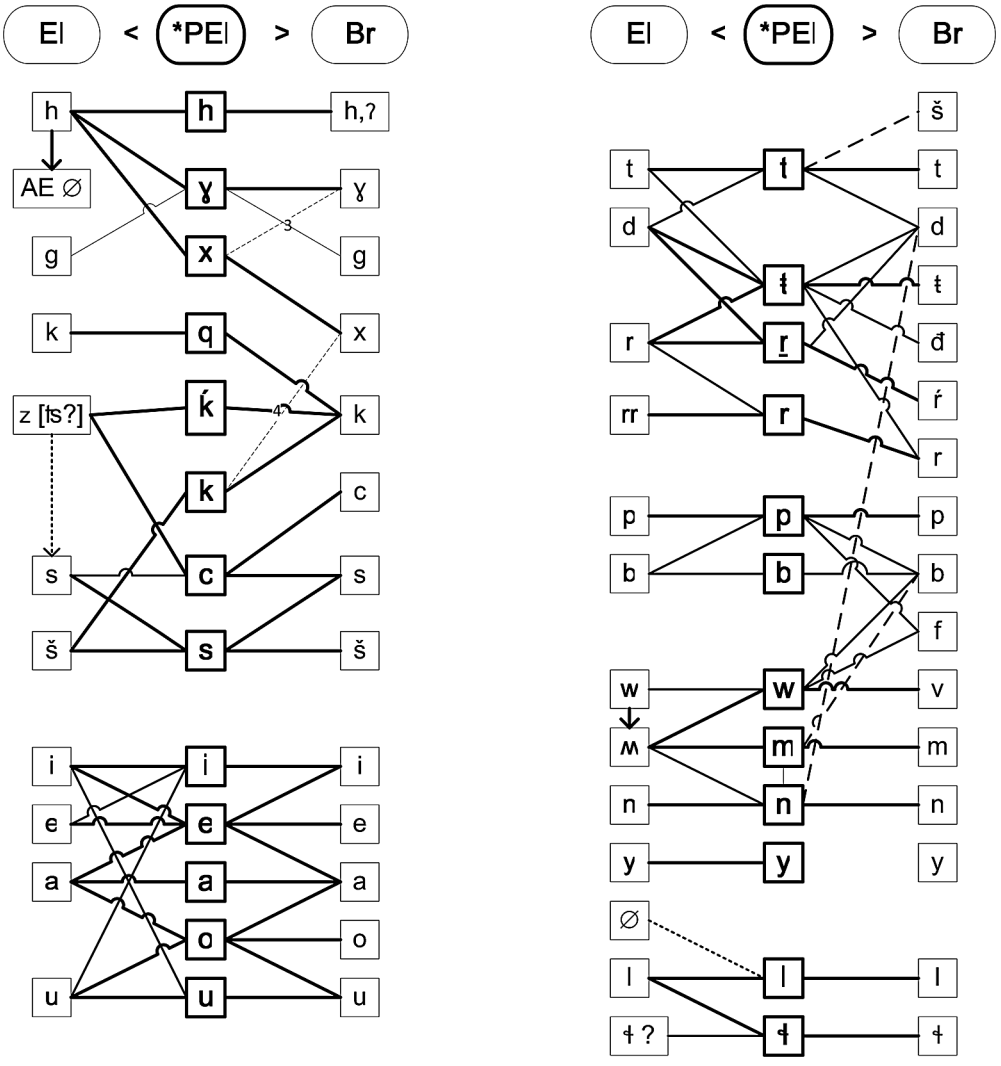

Diagram 3 – Proto-Elamitic Phonemes and Major Correspondences

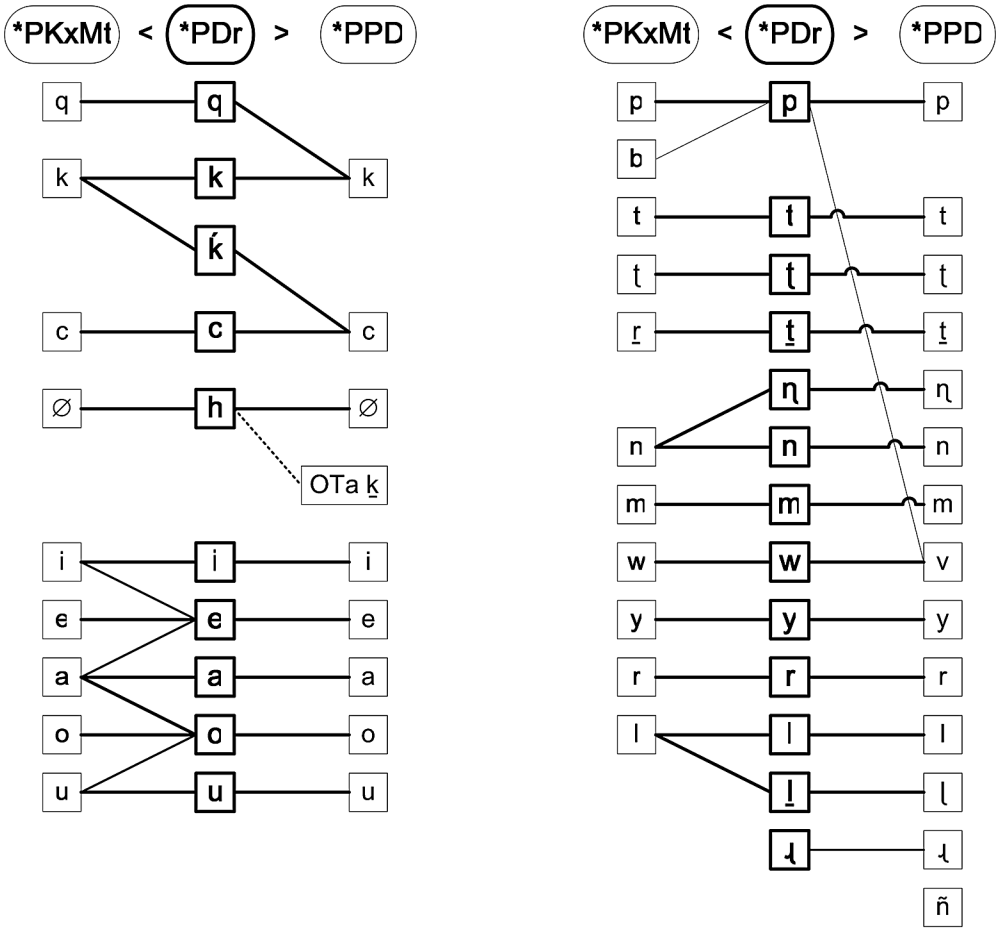

Diagram 4 – Proto-Dravidian Phonemes and Correspondences

APPENDIX 3

Initial Back Consonants in Core/Border Brahui Vocabulary

This list was prepared by removing all known loans whose source is clear. Words with multiple possible sources have been left in, since a definitive source is not clear. The goal is to present a list of terms that are legitimate candidates to be classed as inherited. The original grouping is by its status at the beginning of the analysis and has not been updated. The etymological status at the end of the analysis is indicated in "Source." Here "<" indicates a borrowing, "PZ" indicates cognates in Elamite, Brahui, and Dravidian, "PEl" indicates cognates in Brahui and Elamite, while "PDr" indicates cognates in Dravidian and Brahui only. This latter group implies inclusion in PZ, but with more indirect evidence. Blank, of course, indicates that it is still unknown.

A more extensive pair of complete lists for the terms that Brahui shares with Dravidian is found in Andronov (2006: 111–35). The first list is primarily from the DEDR, while the sec-

ond contains updates, not in the DEDR. These include all reported cognates without discussion of alternatives and include onomatopoetic terms not listed here. It also lists all variants and compounds. Otherwise, the lists are very similar.

The entries are grouped by their etymological possibilities following Rossi's (1979) approach. Group A has words with plausible sources in both Dravidian and Iranian (and/or Indo-Aryan). Group B has those with plausible sources in both Indo-Aryan and Dravidian, or an uncertain direction of borrowing. Group C contains Brahui words with related Dravidian forms, which may include borrowings, while Group D has Brahui words with no known sources.

ID	Word	Meaning	References	See §	Source
A1	ɣuʈʈ (2)	all, altogether, wholly	ILEB E61		< Ir ?
A2	kal (2)	place where water collects	DEDR 2367, ILEB B31, CDIAL 3849		< Ir
A3	kalaɳḍ	old pot, shard	DEDR 1305 (?), ILEB E78	§9.2.1.1	< Ir
A4	kalp	deceitful	DEDR 1372, ILEB E81	§9.2.1.3	< Ir
A5	karrak	bank, shore; margin, border; near	DEDR 1293 (?), ILEB E84b	§9.1.1.2	PZ
A6	kuḍḍī, kuḍī	hut, small house; coop; wife	DEDR 1655, ILEB A193, CDIAL 3232	§8.3.1.1	< Ir or < PDr
A7	xinz-, xunz-	to move in a sitting position	DEDR 1648 (?), ILEB F97	§7.4.1.1	< Ir
B1	kallar	saline soil	DEDR 1359, ILEB I143, CDIAL 2954	§9.2.1.2	< Dr
B2	kann-	to do, make; affect; be able	DEDR 1957, ILEB G5		< IA
B3	kēb	nearness, vicinity; near	DEDR 2814 (?), ILEB F89		?
C1	gaʈ (1)	a bite	DEDR 1124, Elfenbein 1963: 391		?
C2	guḍḍ-	to chop off; slaughter; bruise	DEDR 1656, ILEB E53		?
C3	gulōnʈ	lizard	DEDR 1338 (?), CDIAL 4324		?
C4	ɣuḍḍu, guḍḍu	small, urchin	DEDR 1670		?
C5	kah-, kas+	to die; die down	DEDR 2426	§8.1.1.2, §10.3.1.1	PZ
C5.1	kasf-	to kill; to cure (of hides)	DEDR 2426		
C6	karɣ-	to shear; mow down	DEDR 1564 (?)	§9.1.1.3	PZ
C7	kā+	to go, depart [present base]	DEDR 1419	§8.1.1.1	PZ
C8	kē+	below, down [compounds only]	DEDR 1619	(see C9)	

C8.1	kēdann-	to gulp down, swallow			
C8.2	kēhall-	to stumble			
C8.3	kēhaŕs-	to misappropriate, usurp			
C9	kēraɣ	lower side, bottom; low; under, below	DEDR 1619	§9.7.1.1, §10.4.1.1	PZ
C10	ki/kī+	below, down [compounds only]	DEDR 1619	(see C9)	
C10.1	kiball-	to stumble			
C10.2	kibann-	to stumble			
C10.3	kīhalēng-	to set; fade, flicker out			
C10.4	kitamm-	to let oneself down, dismount, descend			
C11	kīš	matter, pus, snot	DEDR 1606	§9.4.1.6	PZ
C12	kišk-	to pluck, break off, separate; settle	DEDR 1513	§9.4.1.1, §11.2.1.4	PZ
C12.1	kih-	to break, break off		§10.3.1.4	PZ
C13	kirēng	abuse	DEDR 1590 & DEDR 1597	§9.4.1.3	PDr
C14	kirk	grudge, rancor	DEDR 1597	§9.4.1.5	PDr
C15	kirrēf-	to turn a handmill	Elfenbein 1983: 199, add to DEDR 1595	§9.4.1.4	PDr
C16	kōndō (1)	on all fours, bent double	DEDR 2054a	§8.3.2.3	< ?
C17	kubēn	heavy; difficult; serious; precious	DEDR 2677, CDIAL 4869	§8.2.1.1	PZ
C18	kun-	to eat, drink; bite; suffer, endure	DEDR 600, CDIAL 3865	§9.6.1.1	PEl
C19	kurāŕa	inflamed swelling	DEDR 1780 (?)	§8.3.1.4	< ?
C20	kurr-	to keep back, withhold; shrink from contract	DEDR 2687	§8.4.1.3	PDr
C20.1	kūž-	to shrink in fear	Elfenbein 1983: 199, add to DEDR 2687 (?)	§8.3.2.2	< ?
C21	kuʈʈ- (1)	to pound	DEDR 1671, CDIAL 3241(1)	§8.3.1.2	< IA
C21.1	kuʈʈa	bruised	DEDR 1671, CDIAL 3241(1)	§8.3.1.3	< IA
C22	kūr-	to roll up; make a clean sweep of	DEDR 2684	§8.4.1.2	PDr
C23	kūʈ	shaven		§8.3.1.5	< ?
C23.1	kūtī	hornless	DEDR 1914?	§8.3.1.6	< ?
C24	xaf	ear; head [of livestock]; tribute	DEDR 1977a	§7.5.1.1	PZ

C24.1	xafī	vassal, subject, one who pays tribute		§7.5.1.2	PEl
C25	xal	stone, boulder, rock	DEDR 1298	§7.2.2.2	PDr
C25.1	xalaxū	stoned to death			
C26	xall-	to uproot, gather [vegetables]	DEDR 1373	§7.5.1.3	PEl
C27	xall-	to steal, lift [cattle]	DEDR 1372	§7.2.1.2, §7.5.1.3	PZ
C28.1	xall-	to strike	DEDR 2152	§7.6.1.1	PZ
C28.2	xall-	to kill	DEDR 2132	§7.6.1.2	PZ
C29	xał (2)	pain, ache	DEDR 2132 (?)	§7.6.1.2	PDr
C30	xan	eye; bud	DEDR 1159a	§7.2.1.6	PDr
C30.1	xan	knot in wood; corn [foot]	DEDR 1160	§7.2.1.6	PDr
C30.2	xan-	to see, find; be worth	DEDR 1443	§7.2.1.8	PDr
C31	xan-	to give birth to	DEDR 1411	§7.2.1.7	PDr
C32	xar (2)	angry	DEDR 1396	§9.3.2.1	PDr
C33	xarās	bull, bullock	DEDR 1123	§9.3.1.1, §11.2.1.1	PZ compound
C34	xarēn	bitter; weak, poor [of soil]	DEDR 1466	§7.2.1.5	PDr
C35	xarmā	wolf	DEDR 1289 (?)	§7.2.2.1	PDr
C36	xarr- (1)	to sprout	DEDR 2149	§7.6.1.3	PZ
C36.1	xarrun	green, blue; fruitful	DEDR 2149	§7.6.1.3	PDr
C37	xarr- (2)	to proceed on foot	DEDR 1109	§9.3.1.2	PZ
C38	xaŕ	ram	DEDR 1123	§9.3.1.1	PZ
C39	xafīnk	teardrop, tear	DEDR 1159b	§7.2.1.6	PDr
C40	xāxar	fire; firebrand	DEDR 1458	§7.2.1.9	PDr
C41	xāxō	crow	DEDR 1425	§7.7.2.1	PDr
C42	xāxūr	Demoiselle crane [bird]	DEDR 2125	§7.7.2.2	PDr
C43	xīsun	red; gold	DEDR 1931	§7.5.1.5	PDr
C44	xēr (1)	behind, at the back	DEDR 2008 (?)		
C45	xō	cooking pot	DEDR 2225	§7.6.1.5	PDr
C46	xōl	woof, weft, warp	DEDR 2244		
C47	xōl	womb; offspring; entrails	DEDR 2244, CDIAL 3607	§9.9.1.2	PZ
C47.1	xōl(a)xū	entrails; woof & warp	DEDR 2244		
C48	xōlum	wheat	DEDR 1906	§9.9.1.1	PZ
C49	xōšk-, xōš-	to rub; rub shoulders, consort with	DEDR 2189	§7.6.1.4	PDr
C50	xul-, xulī-	to fear, be afraid	DEDR 1806	§7.4.1.3	PDr
C50.1	xulīs	fear; danger	DEDR 1806	§7.4.1.3	PDr

C50.2	xulkun	soft; tractable, submissive, worn away	DEDR 1806	§7.4.1.3	PDr
C51	xull-	to pierce, stab; insert; traverse	DEDR 1833	§7.4.1.5	PDr
C52	xumb	both arms, embrace, armload	DEDR 1558	§7.5.1.4	PDr
C53	xurrukāw	a snore	DEDR 1796	§9.5.1.1	PDr
C54	xurrum	grain pit	DEDR 1818	§7.4.1.4	PDr
C55	xutt-	to dig, probe	DEDR 1719	§7.4.1.2	PDr
C56	xwāh- (2)	to graze	DEDR 1416	§7.2.1.4	PDr
D1	gadar (2)	nomad woman's shift			
D2	gaddik	a small black and white bird			
D3	gaddō	pickaback [of males]			
D4	gandarēm	a medicinal herb			
D5	garaŕ	dry crop sowing by drill			
D6	garbust	a wild plant used as fodder, *Lepidium draba*			
D7	gārt-	to belch			
D8	gānd-	to pluck up, pluck out			
D9	gēd, gēŕ (1)	roofed enclosure for animals; pent in		§9.8.1.1	PEl
D10	gēŕ (2)	brushwood hedge			
D11	gilkat	catechu			
D12	gillik	buttock			
D13	giŕ, gih	all; whole; only, exclusively		§7.1.2.1	PEl
D14	giŕik	ball of thread, string, etc.			
D15	gud (1)	after			
D16	ɣand-	to mix up, mess up, muddle; involve in perplexity			
D17	ɣir-	to roll over or down			
D18	ɣur (1)	one squeeze of milk			
D19	ɣur (2)	inner corner of eye			
D20	ɣutt (1)	swollen gland			
D21	kaddan	collar for an animal			
D22	kahērō	the tree, *Ehretia obtusifolia*		§9.1.1.4, §10.3.1.3	PEl
D23	kahw	dyspepsia			
D24	kaŕak	hole, fissure			

D25	kata	young locust			
D26	katal (1)	a wild grass			
D27	katal (2)	ears of corn with retained grain after threshing			
D28	kaj (1)	a wild fodder grass			
D29	kajjēng-	to waste away; get sick			
D30	kalaasēat	with difficulty; scarcely, hardly, just			
D31	kalūŕ	ashes			
D32	kāndār	a wild bush			
D33	karaz	rafter			
D34	karrāī	early spring			
D35	kasar	way, path, road; course, resource		§9.1.1.2, §11.4.1.2	PEl
D36	kasūŕ	a wild tree			
D37	katil	dates packed in a lump			
D38	kattī	beckoning			
D39	kazab	big date bag made of dwarf-palm leaves			
D40	kātum	head; point; bank; top			
D41	kāō	debt, loan, indebtedness			
D42	kāwār-	to poison			
D43	kāwēl	lower end of embanked field where water collects			
D44	kil	broadcast			
D45	kisānkūr	the wild shrub, *Peganum harmada*			
D46	kitt-	to groan			
D47	kīt	untanned sheepskin bag			
D48	kīndaw	hill track; end of intestine, tripe			
D49	kōk (2)	inner corner of the eye			
D50	kōnd-	to prick, pierce, stab			
D51	kōr (2)	species of acacia tree			
D52	kōs	puckered; pucker; rancor			
D52B	kul in cakkul	small spring	DEDR 2569	§8.2.1.2	PEl
D53	kutink	burning fagot			
D54	kuncitō	a wild bush			
D55	kunnal	curl, ringlet; coiled; worry, pestering		§8.2.1.3	PEl
D56	kur	flock of sheep or goats			

D57	kutk	ball or clew of cotton			
D58	kū+	day [on or back], adverbial prefix			
D59	kūlaŕ	asafoetida stem			
D60	kūlitī	small mud corn bin		§8.3.2.1	< IA
D61	kūs	shirt, smock			
D62	xad	breast, nipple, dug, teat			
D63	xadō	last year			
D64	xalēɣā	leopard			
D65	xall-	to apply gently			
D66	xall-	to fire [a gun], throw [a rock]			
D67	xall-	to pitch [a tent]; plant [a tree]		§7.3.1.1	PEl
D68	xall-	to traverse [a road]			
D69	xarīš	best quality ghee			
D70	xass-	to shake; hustle, pester; fling; hit		§7.2.1.3, §11.4.1.1	PEl
D70.1	xassī	butter			
D70.2	xāsun	buttermilk			
D71	xawā	waterskin, leather bag for holding water			
D72	xazm	deer			
D73	xwār	bead			
D74	xāc-	to lie down, go to sleep			
D75	xāōt	family			
D76	xāza	raw, excoriated; lean; boneless			
D77	xāɣal	ferrous sulfate			
D78	xuŕk	close, close by; vicinity; near			
D79	xuš	side of head/hill; outside corner			
D79.1	xušīdān	temples [of head]			
D80	xūlēf	a fodder grass			

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